



Ghana's Private Sector Investment Plan for Agricultural Development

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Notes and Definitions

Regional Comparison

Figure 1: ECOWAS Countries for Regional Comparison

 Benin	 Burkina Faso	 Cape Verde	 Côte d'Ivoire	 Gambia
 Guinea	 Guinea-Bissau	 Liberia	 Mali	 Niger
 Nigeria	 Senegal	 Sierra Leone	 Togo	

Except where noted, regional comparisons for Ghana include the other 14 member states of ECOWAS: Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo. These countries are proximate to Ghana and share trade linkages.

Currency

Unless otherwise noted, all monetary amounts are in U.S. dollars.

List of Abbreviations

AGRA	Alliance for a Green Revolution in Africa
ASWG	Agriculture Sector Working Group
BTC	Belgian Development Agency
CAADP	Comprehensive Africa Agriculture Development Programme
CPG	Consumer packaged goods
DFID	Department for International Development (UK)
DG	Director General
ECOWAP	ECOWAS Agricultural Policy
ECOWAS	Economic Community of West African States
EDIF	Export Development and Investment Fund
FAO	Food and Agriculture Organization of the United Nations
FASDEP II	Food and Agriculture Sector Development Policy
FBO	Farmer based organization
FDI	Foreign direct investment
FtF	Feed the Future

GCAP	Ghana Commercial Agriculture Project
GDP	Gross domestic product
GEPC	Ghana Export Promotion Council
GGC	Ghana Grains Council
GIDA	Ghana Irrigation Development Authority
GIPC	Ghana Investment Promotion Centre
GoG	Government of Ghana
GSGDA	Ghana Shared Growth and Development Agenda
ha	Hectare
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IFDC	International Fertilizer Development Center
IFPRI	International Food Policy Research Institute
IRR	Internal rate of return
JICA	Japanese International Cooperation Agency
KFW	German Development Bank
MD	Managing Director
MDAs	Ministries, departments, and agencies (Government of Ghana)
METASIP	Medium Term Agriculture Sector Investment Plan
METSS	Monitoring, Evaluation, and Technical Support Services
MiDA	Millennium Development Authority
MoFA	Ministry of Food and Agriculture
MoFEP	Ministry of Finance and Economic Planning
MoTI	Ministry of Trade and Industry
MT	Metric ton
NAFCO	National Buffer Stock Company
NDPC	National Development Planning Commission

NEPAD	New Partnership for African Development
PEF	Private Enterprise Foundation
PIU	Project Implementation Unit
PPMED	Policy Planning, Monitoring, and Evaluation Directorate (MoFA)
PPP	Public-private partnership
PSIP	Private Sector Investment Plan
PSDS II	Private Sector Development Strategy (MoTI)
SADA	Savannah Accelerated Development Authority
SHF	Smallholder farmer
SME	Small and medium enterprise
SRID	Statistics, Research, and Information Directorate (MoFA)
VCTF	Venture Capital Trust Fund
USAID	United States Agency for International Development
WAAPP	West Africa Agricultural Productivity Programme
WATH	West Africa Trade Hub
WFP	World Food Programme

Executive Summary

This document provides an overview of Ghana's agricultural investment landscape and highlights key opportunities for private sector investment. Specifically, this document:

- Offers insight into Ghana's macroeconomic environment and the development of its agricultural sector.
- Identifies the forces and factors driving growth in its commercial food market.
- Explores the landscape for private sector agribusiness investment in Ghana, particularly in the three northern regions marked as development priority areas by the Government of Ghana.
- Prioritizes seven value chains for private sector investment, calling out specific investment opportunities within each.
- Reviews the barriers to private sector investment in Ghana—and what strategies and activities the Government of Ghana is considering or already implementing to mitigate them.

Overview of Ghana's Agricultural Sector

Macroeconomic Outlook

With a 2011 GDP of \$38.6 billion, Ghana is West Africa's second-largest economy. As **Figure 2** illustrates, Ghana's GDP has experienced sustained growth of 5 to 8% per year over the past decade. While growth slowed in 2009 due to reduced activity in the services sector, the economy quickly stabilized and is forecast to continue growing at 6 to 7% per year in the near future, driven in large part by the expansion of the oil sector.



In addition, Ghana's strong and stable democratic tradition, rule of law, and investor protections are unmatched in the sub-region. The World Bank's "Doing Business" index ranks Ghana as the best performer in West Africa by a significant margin.

Current Status of Ghana's Agricultural Sector

Ghana's agricultural sector is a key driver of the Ghanaian economy, contributing 30% to GDP and just over 50% to national employment, and grew by an average annual rate of 4.5% from 2006 to 2010. The sector also offers a unique set of advantages to interested investors, including large plots of arable land, ecological zones that make the country suitable for the production of a diverse range of commodities, a

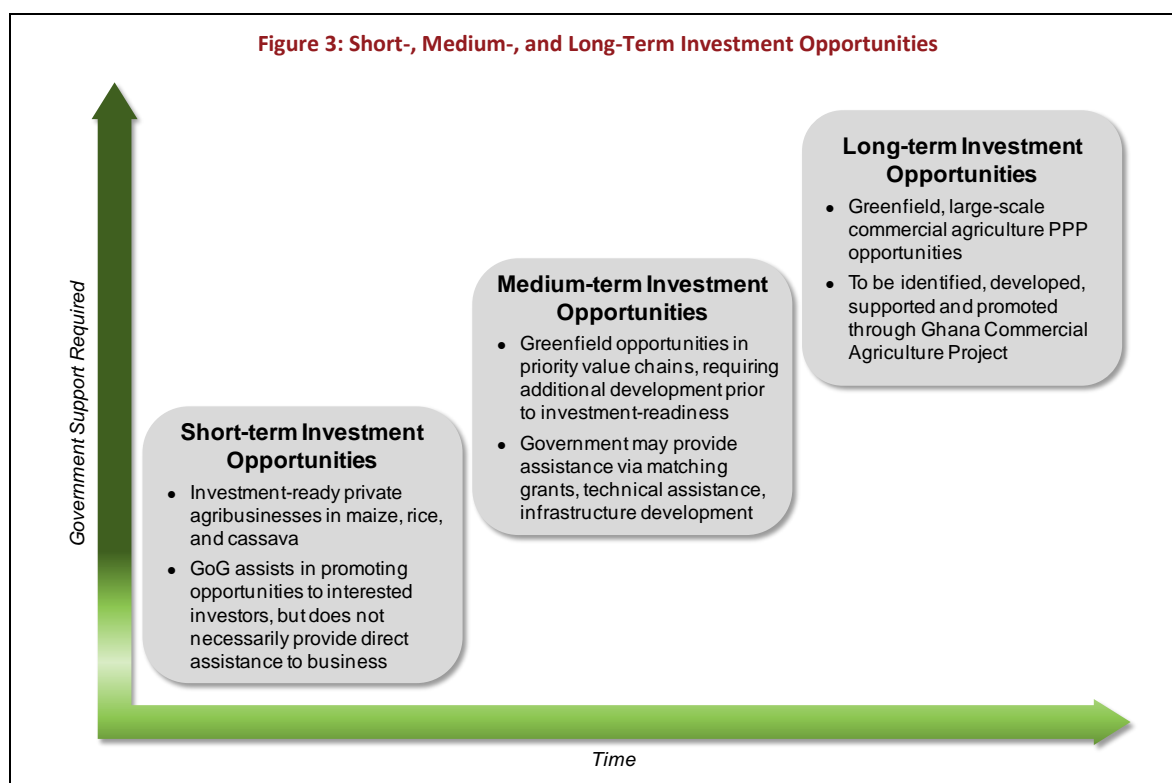
strong enabling environment for investment, and established export channels to Europe and the United States.

Drivers of Growth in Ghana's Commercial Food Market

Rapid urbanization and rising per-capita income in Ghana are driving significant increases in domestic demand for and consumption of staple crops. While the country is currently self-sufficient in most key staple crops, continued increases in consumption—along with shifts in consumer preferences toward rice and higher-value processed foods—are widening the gap between demand and supply. This gap is currently being addressed through increased imports; however, the country has significant potential to scale up its agricultural production not only to meet rising domestic demand, but also to produce staple crops for export to neighboring countries within the Sahel region.

Investment Opportunities in Ghanaian Agriculture

This document includes indicative short-, medium- and long-term investment opportunities that were identified through conversations with the private sector and selected to align with the Government's priorities for commercial agriculture. Viable private sector investment in commercial agriculture in Ghana can take many forms; investors are encouraged to consider these opportunities among a wide range of potential investments in Ghana's agricultural landscape.



Short-Term Investment Opportunities

Short-term opportunities include investments that provide capital to operating agribusinesses seeking to expand the production or processing of key commodities. An initial analysis of the sector looked at a number of value chains to assess their attractiveness for short-term investment. Assessment criteria

included: (1) market potential for growth (local, regional, and global); (2) Ghana's competitiveness in production; (3) investor interest, based on conversations with 60+ private sector agribusinesses and financial investors; (4) potential for social impact; and (5) contribution to the development of northern Ghana, a key strategic focus of the Government of Ghana.

Through this process, three value chains were identified as strong areas of opportunity for short-term investment: cassava, rice, and maize. While these value chains were prioritized for their immediate competitiveness and attractiveness, short-term opportunities also exist in other value chains.

Cassava

Rationale for prioritization: Demand for cassava is expected to continue to grow strongly due to its wide-ranging applications; in addition to being a key staple of the Ghanaian diet, it is also used by breweries and can serve as a partial replacement for wheat flour. In 2010, Ghana produced more than 13 million metric tons of cassava, making it the most highly produced crop in the country and the second most widely grown by area. Cassava yields in Ghana are 20 to 30% higher than regional and global averages; improved agronomic practices and mechanization have the potential to increase these yields even further. In order to expand cassava production to meet rising demand, cassava processing capacity will need to be developed, as the crop spoils quickly upon harvest and post-harvest losses constrain the potential for export.



Indicative opportunity: Investment in intermediary cassava processing to produce cassava cake and flour, for use as a brewery input and as a replacement for wheat flour.

Rice

Rationale for prioritization: Domestic consumption of rice is expected to grow significantly in the next several years, as consumer preference for rice over other grains increases. While Ghana currently produces nearly 300,000 metric tons of rice per year, the demand for rice necessitates the import of another 300,000 to 400,000 tons—a quantity that will likely increase as consumption further outpaces production. Production of straight-milled, aromatic rice will also need to increase in order to meet the preferences of more sophisticated consumers. As such, there is strong potential for investment in the rice value chain as a means to stimulate local production.



Indicative opportunity: Investment in smallholder farmer aggregators that organize and purchase local rice for sale in the domestic market.

Maize

Rationale for prioritization: Maize is Ghana's most widely consumed staple crop—and its production is a key component of Ghana's food security agenda. While middle-class consumer preferences are shifting toward rice, continued population growth is expected to strengthen the already high local demand for maize, which grew 8% per year from 2005 to 2009. In addition, yellow maize is a key input into Ghana's growing poultry sector, which serves as an additional market for local production.



Indicative opportunity: Investment in the production of high-quality and certified maize seed for sale to smallholder farmers and farmer based organizations to improve maize yields.

Medium-Term Opportunities

Medium-term opportunities include greenfield investments in the primary production and processing of commodities with significant potential to become competitive with imports. Opportunities in these value chains may require additional development in order to be commercially viable in the long term.

Cashew: Rising local demand and a flourishing export market are driving growth in the local production of cashews, for which West Africa has a competitive advantage. Currently, there is little capacity in Ghana to process local production; opportunities exist to expand that processing capacity to serve local and export markets. Additionally, cashews are an important source of buffer cash for Ghana's smallholder farmers, as most harvesting takes place during the lean season for other key crops.

Poultry: Rising domestic incomes in Ghana have increased consumer demand for animal protein, with consumption of meat growing 14% per year from 2005 to 2009. Locally produced poultry consists primarily of "layers" rather than "broilers"; the latter are largely imported from Brazil due to the lower cost of production there. Poultry production costs are dominated by the cost of feed; however, increased domestic production and processing of yellow maize and soybean—both of which are inputs to poultry feed—could mitigate this factor, making Ghanaian poultry more competitive and investments in this value chain more profitable.

Sorghum: Sorghum is a major staple crop in northern Ghana, with domestic consumption increasing 17% annually. This staple is used both for human consumption and as an animal feed input. Additionally, breweries in Africa, including Guinness Ghana Breweries, are increasingly replacing imported barley with locally produced sorghum in their processing in order to localize supply. Opportunities exist to expand sorghum production for both breweries and animal feed producers.

Soybean: Local consumption of soybean has grown rapidly, increasing 26% annually from 2005 to 2009. This demand is being driven in large part by the use of soybean meal as an input into poultry feed. Soybean oil is also in high demand by the local paint industry. Soybean demand is also on the rise globally, due to its increased use in the production of both biodiesel and livestock/poultry feed. Opportunities exist in Ghana to serve the growing local poultry industry through the production and processing of soybean.

Long-Term Investment Opportunities

The Government of Ghana has made the modernization of commercial agriculture a key development priority—particularly in northern Ghana, where agriculture remains the most important source of income for most of the population. In the long term, public sector and donor initiatives may assist investors and agribusinesses in scaling up inclusive business models that improve farmers' and businesses' commercial potential, while also promoting viable investment opportunities to interested investors. Five such opportunities have already been identified:

- A commercial nucleus farm and out-grower scheme for irrigated rice production and processing in Bamboi
- A nucleus seed crop farm to provide extension, inputs, and processing to farmers in an existing irrigation scheme in Tono

-
- Block irrigated rice farms in the Lower Volta
 - Gravity-fed irrigation for rice and banana plantations in the Accra Plains
 - Mechanized cultivation of maize and soybean and production of seed crops to support the poultry feed industry in Branim

In addition, the Ghana Commercial Agriculture Project (GCAP), a joint project of the Government of Ghana, the World Bank, and USAID, will support the identification and development of private commercial agriculture investment opportunities. GCAP will identify public-private infrastructure partnerships, complementary public investments, and the technical assistance required to support investment in the Accra Plains and Northern Ghana. Interested investors are encouraged to take part in mutually beneficial and commercially viable public-private partnerships to develop irrigation, warehousing, and transport infrastructure. Additionally, GCAP will provide matching grants to startup agribusinesses and facilitate business development for agriculture service providers throughout the value chain—particularly enterprises with inclusive business models that benefit poor rural households.

Investment Challenges and Government Responses

Every investment opportunity comes with associated risks. A survey of local, regional, and global private sector agribusinesses and investors revealed several issue areas that potential investors might face when pursuing opportunities in Ghana's agricultural sector. These include: (1) underdeveloped agriculture, transport, and energy infrastructure, particularly in northern Ghana; (2) poor agronomic practices by smallholder farmers; (3) complications in land acquisition and tenure; (4) high cost of local financing; and (5) complexity in the business operating environment.

For each of these risks, the Government of Ghana has developed interventions to ease challenges and facilitate additional investment. Through collaborations with development partners, the Government has launched various projects and programs to develop key infrastructure, address the complexities associated with acquiring land, and improve smallholder farmers' agronomic practices. In addition, the Government has issued a mandate to a number of financial institutions to provide low-cost credit and/or concessionary finance to the sector. Finally, as a means to catalyze future agricultural investment, plans are underway to strengthen the capacity of existing investment promotion functions as well as provide project implementation support to investors.

Recommendations for Investors

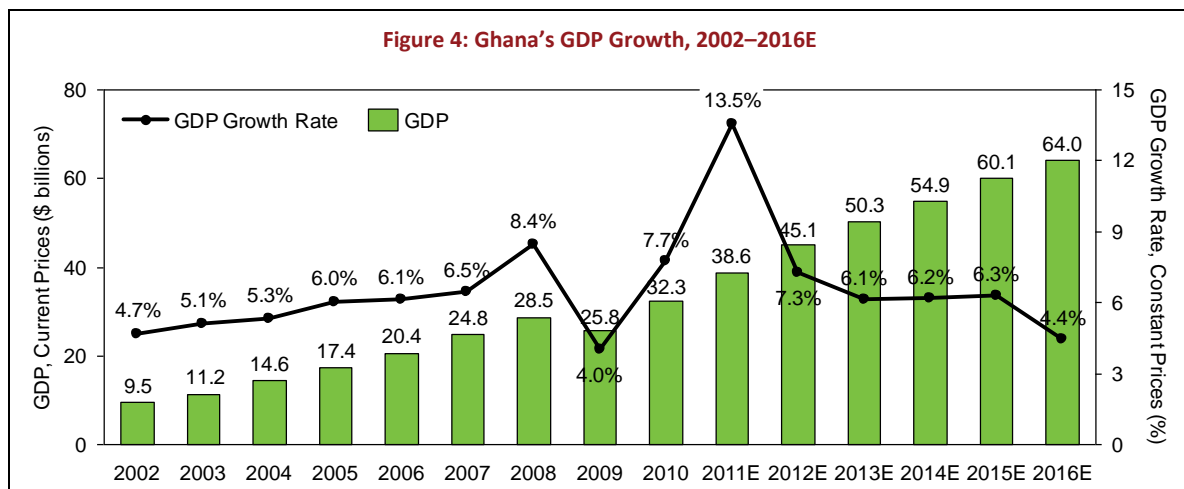
Investors interested in learning more about these and other opportunities in Ghana's agribusiness sector should contact the Ghana Investment Promotion Centre or the Trade and Investment Division of the Embassy of Ghana in their local country.

Part 1: Ghana Macroeconomic Overview

1.1 Economic Overview of Ghana

GDP Growth and Economic Outlook

Ghana has experienced strong and sustained economic growth over the last 10 years, with an average GDP annual growth rate of 6.5% (this includes the temporary slowdown to 4% in 2009 and the quick rebound to 13.5% in 2011; see **Figure 4**).¹ Its economy is forecast to continue to grow at 6 to 7% annually in the coming years. With an average annual per capita income of \$1,343, Ghana fits within the lower-middle income group of nations worldwide, on par with Sudan, Uzbekistan, and Papua New Guinea.



Sectoral Composition

Ghana has traditionally been heavily reliant on its agricultural sector as the primary source of economic activity and employment in the country. Ghana's recent economic growth, however, has been driven largely by gains in the services and industry sectors, primarily due to the recent discovery of oil and the subsequent development of Ghana's petroleum industry.² Nonetheless, agriculture remains a key component of the economy and an important contributor to national employment.

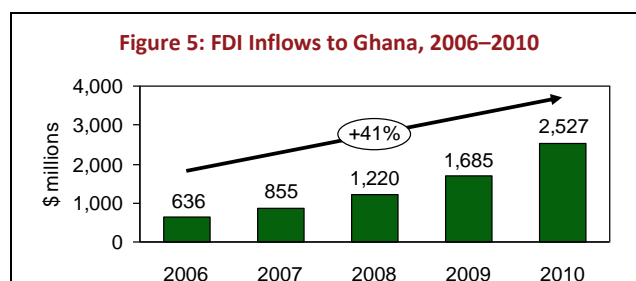
¹ International Monetary Fund, World Economic Outlook Database, September 2011.

² Ghana's 2012 budget targets 9.2% real GDP growth and 7.6% growth outside of the oil sector. These targets are based on projected oil revenue inflows of \$125 million in fiscal year 2011, \$500 million in FY12, and \$400 million in FY13. Source: Ghana Shared Growth and Development Agenda.

FDI Inflows

Ghana's strong economic growth has been accompanied by significant increases in FDI inflows. From 2006 to 2010, FDI into Ghana increased from \$636 million to \$2.53 billion at a compound annual rate of 41% (see **Figure 5**).

Ghana has been recognized as one of the most open economies in sub-Saharan Africa for foreign equity investment. As the World Bank's "Investing Across Borders 2010" report highlights, Ghana permits full foreign ownership of companies in its agricultural sector as well as in a number of other sectors (not including mining, oil, and gas). However, the report also cites difficulty in acquiring and/or leasing land as an investment constraint. Foreign companies can lease land for a maximum of 50 years but cannot buy publicly or privately held land.³ Through its Land Administration Project, Ghana's Lands Commission is currently working to centralize all land-related information for interested investors and assist investors with structuring and closing lease agreements with landowners. To complement these efforts, the Ghana Commercial Agriculture Project (GCAP) intends to establish an information clearing house on available land and develop model lease agreements for negotiations between investors and local communities.



Financial Sector

Ghana has achieved remarkable success in developing its financial sector. This success can be attributed to well-sequenced policies, enhanced competition, and gradual capital account liberalization.

Domestic Capital Markets

The Foreign Exchange Act of 2006 opened Ghana's financial sector to non-resident investors and helped accelerate the development of Ghana's domestic capital markets. Currently, the secondary government bond market and the Ghana Stock Exchange (GSE) remain illiquid, as the total value traded on the GSE is less than 1% of GDP. As such, the Government has prioritized the broadening of the local private investor base in order to spur financial activity and participation in the GSE.⁴

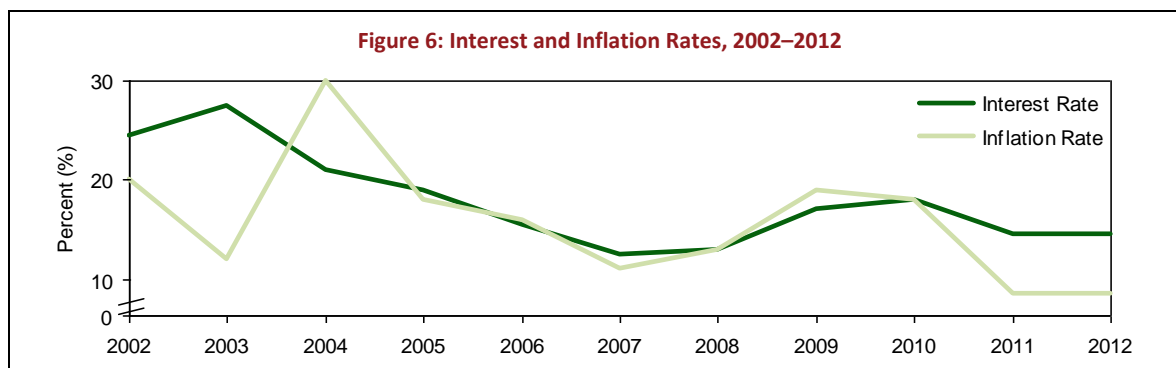
Interest and Inflation Rates

The Bank of Ghana Act of 2002 established an inflation-targeting framework for the country and created a Monetary Policy Committee to oversee the new framework. As a consequence, annual inflation has plummeted from 62% in 2001 to 8.5% in 2011 and is forecast to decline to 5.5% in the medium term.⁵ The Monetary Policy Committee is also responsible for making decisions on central bank interest rates, which are a key lever used to control inflation. Interest rates in Ghana have fallen from 28% in 2003 to 14.5% in 2012. Inflation and interest rate trends over the last ten years are shown in **Figure 6**.

³ "Investing Across Borders 2010," World Bank.

⁴ "Ghana's Reforms Transform its Financial Sector," IMF African Department.

⁵ IMF/ World Bank Debt Sustainability Analysis (2011), "IMF Helps Ghana Learn from Others on Inflation Targets," IMF.



Public Debt

Ghana's recent transition to middle-income status means that concessional financing from official bilateral creditors is expected to decline and gradually be replaced by commercial borrowing over the medium to long term. In 2007, Ghana issued a \$750 million sovereign bond to fund infrastructure investment and it is expected that the bond will be rolled over in 2017 and 2027. While there is some risk associated with taking on more debt, given that public debt already accounts for 40% of GDP, the Government of Ghana is working vigilantly to preserve its newfound debt sustainability; its macroeconomic policy is geared toward keeping both external and domestic debt sustainable.

Banking Sector and Private Debt

Ghana's banking sector has grown rapidly in recent years, largely fueled by credit expansion. While credit to the private sector began declining in 2008, private debt rebounded strongly in 2012, expanding by 43% to \$5.6 billion from February 2011 to February 2012. Services, commerce, and finance were the sectors with the highest shares of credit.⁶ From January 2011 to January 2012, the banking sector's total assets grew by about 27%, reaching \$14 billion. Financial soundness indicators show that capital adequacy ratios are now at a healthy level of roughly 18%—well above prudential requirements of 10%.⁷ Overall, Ghana's banking sector now accounts for 70% of its financial sector.

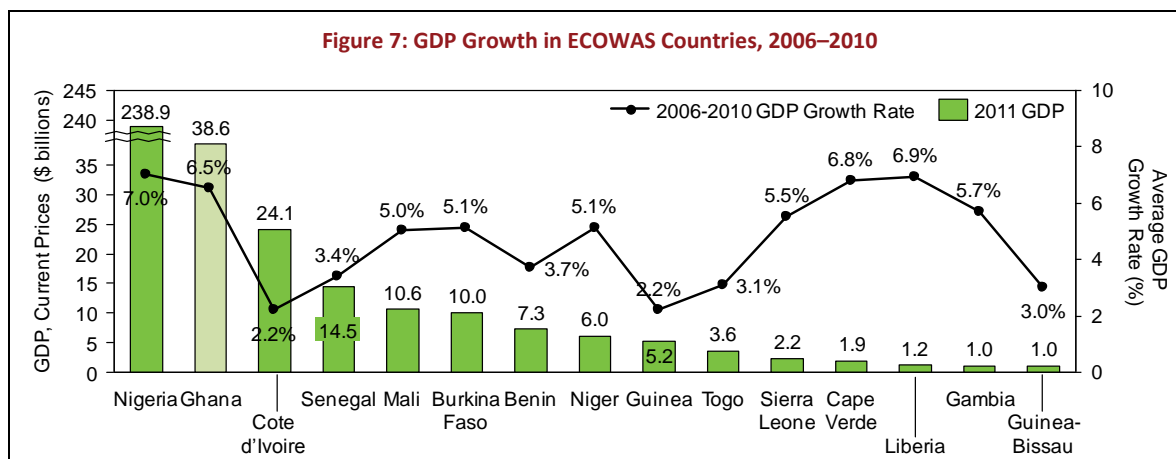
1.2 Regional Comparison of Ghana

With a 2011 GDP of \$38.6 billion, Ghana is the second-largest economy in West Africa, trailing only Nigeria's \$238.9 billion. Cote d'Ivoire is a close third, while Senegal and Mali are the only other economies in the region above \$10 billion.⁸ While growth rates in ECOWAS countries have been highly variable, Ghana's growth has been steady; from 2006 to 2010, it boasted the fourth-fastest growing economy in the region.

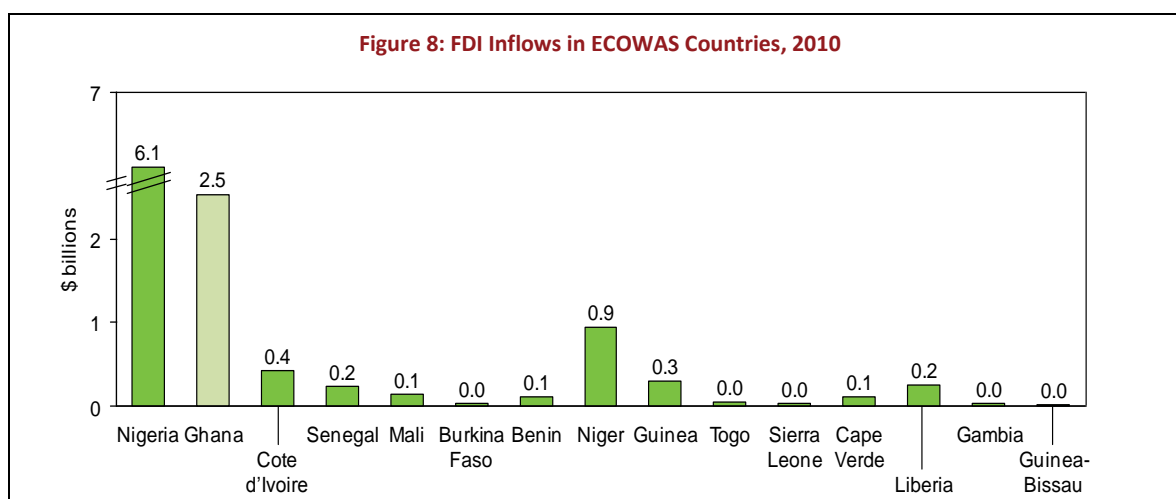
⁶ Bank of Ghana Monetary Policy Committee Press Release, 2012.

⁷ Ibid.

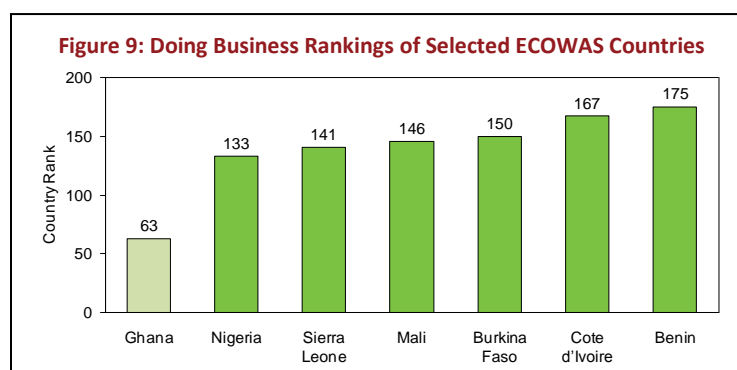
⁸ IMF World Economic Outlook Database, 2012.



FDI inflows into the ECOWAS region totaled \$11.3 billion in 2010. More than half of this investment went to Nigeria, particularly its growing petroleum sector. Ghana, meanwhile, accounted for nearly one-quarter of all FDI into the region, indicating strong private sector interest.⁹



Ghana is widely recognized as having by far the most attractive investment and business environment in the region. According to the World Bank's 2012 "Doing Business" index, Ghana is one of the top destinations for investment in all of sub-Saharan Africa.¹⁰ Ghana performs particularly strongly along the dimensions of



⁹ UNCTADSTAT, United Nations Conference on Trade and Development, 2010.

¹⁰ "Doing Business" index, World Bank, 2012.

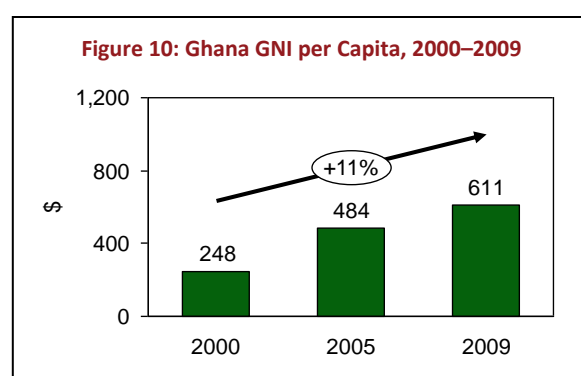
registering property, enforcing contracts, protecting investors, and getting credit, ranking in the top 50 countries in the world along all these indicators.

Part 2: Growth of Ghana's Commercial Food Market

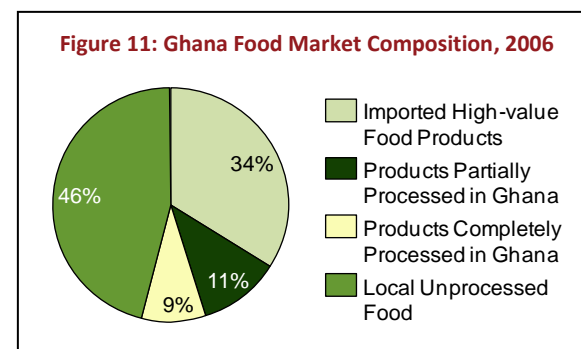
Ghana's commercial food market is poised for steady growth in the coming years. As the country urbanizes and consumer incomes rise, investment opportunities across agricultural value chains will both increase and expand. Consumer tastes are shifting not only to food of a higher standard and quality but to a more sophisticated shopping experience, giving formal retail outlets a more important role in the economy. As such, new structures that organize importers, distributors, and wholesalers in order to support the growing retail sector are being put into place. However, there is a growing supply gap in both raw materials and processed foods: while Ghana is currently self-sufficient in key staple crops, growth in demand for many agriculture products is outpacing local production, necessitating the import of these goods.

Trends in Local Demand for Food

Two factors are driving local consumer preferences toward higher-value and processed foods: the urbanization of the population and rising incomes among Ghana's burgeoning middle class (GNI per capita increased by 11% per year from 2000 to 2009, as shown in **Figure 10**.¹¹) Demand for animal protein and foods of a higher quality—such as poultry, meat, and aromatic straight-milled rice—is increasing among consumers in this group, who are simultaneously shifting away from traditional staples such as maize.



As Ghana continues to experience high rates of urbanization, these trends will become even more pronounced. Between 2000 and 2010, Ghana's urban population increased by an average of 4% per year, while the percentage of the population living in urban areas increased from 44% to 51.5%.¹² According to African Development Bank projections, annual per capita food consumption in Ghana is expected to reach \$580 by 2015, double the 2009 level.¹³ This growth will be driven by a substantial increase in demand for food—more specifically, food of a higher standard and quality. **Figure 11** illustrates that high-value and processed foods accounted for approximately 54% of the \$1 billion retail market in 2006, while local unprocessed foods accounted for the remaining 46%.¹⁴ The share of processed foods is expected to increase as preferences continue to shift.



The economic impacts of the recent discovery of oil in Ghana will likely be disproportionately concentrated in cities linked to “oil windfalls”; as a consequence, rising demand for high-value and

¹¹ 2010 World Statistics Pocket Book, UN Data.

¹² World Development Indicators 2011, World Bank.

¹³ “Hungry for Investment: Ghana’s Food Industry,” Ghana Business and Finance Journal, 2012.

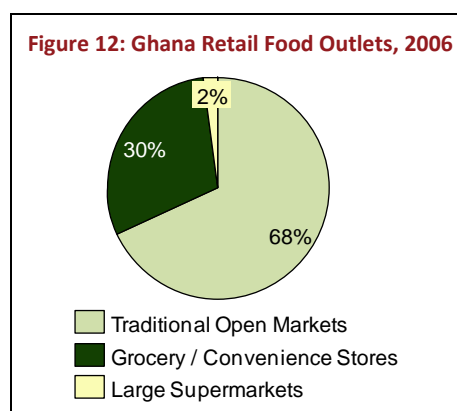
¹⁴ Ghana Retail Food Sector, Global Agriculture Information Network, 2007.

processed foods is expected to be particularly acute in these cities. Nonetheless, such demand is also present and rising in other urban areas. A number of multinationals have increased their efforts to capture a share in this growing market and entrench their brands in the typical Ghanaian middle class meal. In September 2010, for example, Nestle opened a state-of-the-art \$40 million Cerelac plant in Tema with the goal of doubling its capacity to 18,000 tons of Cerelac per year. Cerelac is an infant cereal that is increasingly being substituted for the more traditional maize or millet-based porridges that Ghanaian infants have historically been fed. In a similar vein, Unilever sold its oil palm plantation in Ghana in an effort to move away from primary production and into processing and other activities further downstream. The company has now refocused on its core activities of manufacturing, marketing, and distributing food and home and personal care products.

Development of Retail and Distribution Channels

Shifts in consumer preferences toward higher-value commodities and processed foods have already precipitated changes in the Ghanaian food industry's end markets; specifically, new retail outlets more suited to the sale of such goods are becoming more prominent.

As of 2006, the Ghanaian retail food market was still dominated by traditional markets, which had a 68% market share. Although grocery stores and large supermarkets were becoming more prominent, they still represented just 30% and 2% of the market, respectively.¹⁵ However, members of Ghana's growing middle class, including significant numbers of Ghanaians returning home after living abroad, tend to prefer the more formal shopping experience offered by supermarkets and grocery stores. Furthermore, the growing expatriate community is more accustomed to the pricing transparency characteristic of these outlets. As a consequence, Ghana's organized retail sector is expanding, shopping malls such as the Accra Mall and A&C Mall are becoming more popular, and a number of property groups are targeting the country for additional retail development.¹⁶



Importers, distributors, and wholesalers have also organized themselves to better serve the growing food market. For example, Ghana's six major rice importers have developed robust distribution networks throughout the country, while key rice distributors have strategically and predominantly located themselves in the major cities of Accra, Kumasi, and Takoradi. Both are supported by rice wholesalers located in major urban centers throughout Ghana's various regions.¹⁷

The development of market structures—and, more specifically, the shift to formal retail—offers a positive signal to prospective investors in Ghana's agricultural sector. Access to an organized marketing and distribution systems simplifies the process of identifying customers for agricultural produce. In addition, the consolidation and modernization of Ghana's food distribution through formal retail channels enables larger transactions. Meanwhile, the marketing tactics that accompany formal food retail will likely continue to increase consumer preferences for processed goods and higher-value produce.

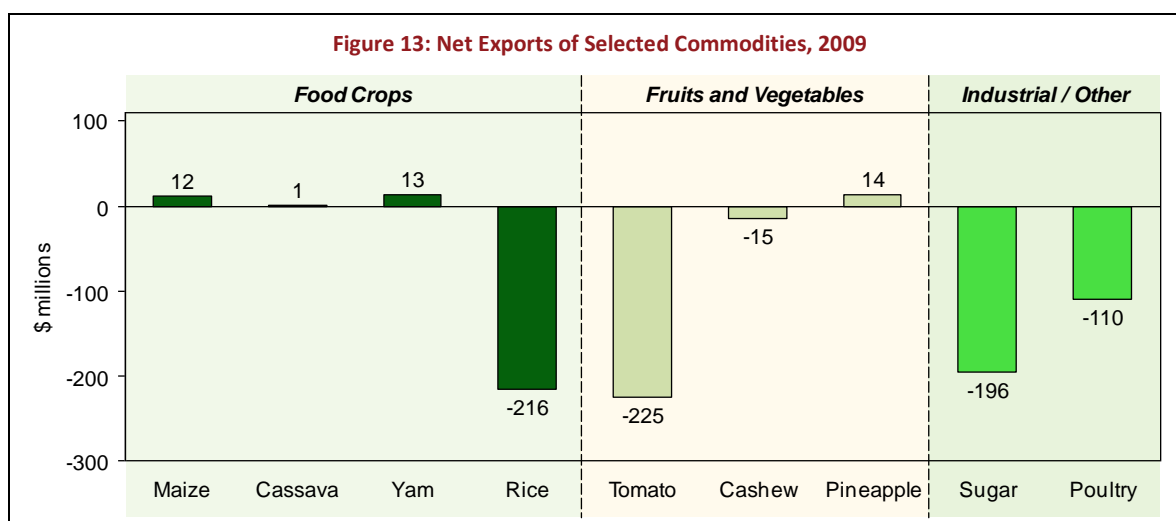
¹⁵ Ghana Retail Food Sector, Global Agriculture Information Network, 2007.

¹⁶ *Ghana Modern Retail on the Rise*, Oxford Business Group, 2012.

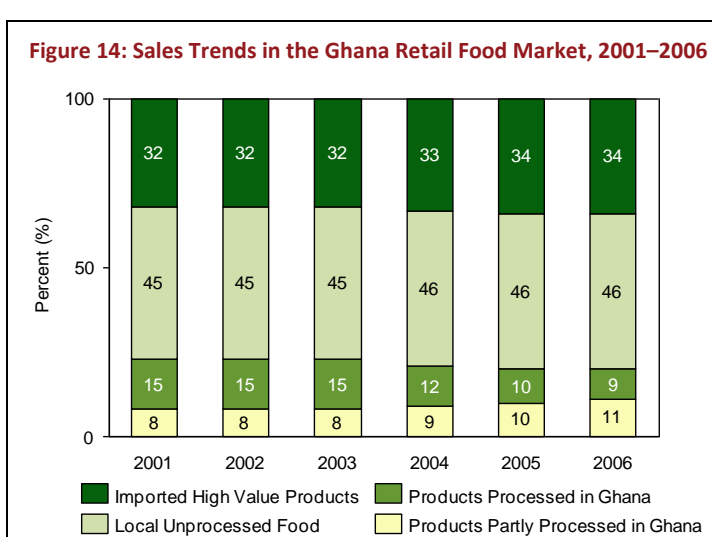
¹⁷ "The Market for Maize, Rice, Soy, and Warehousing in Northern Ghana," USAID, 2012.

Trends in Production

Ghana is currently unable to meet its own growing and diversifying demand for food. While the country is self-sufficient in many key staple crops, excess demand in other critical crops—including rice, tomato, sugar, and poultry—have to be met by imports.¹⁸ In fact, Ghana currently produces less than 30% of the raw materials needed by its agro-based industries.



Similarly, local agro-processing capacity is also too low to meet increasing demand. Sales trends for food products sold in Ghana's retail sector show a slight growth in imported products, from a sales share of 45% in 2000 to 46% in 2006. Conversely, the share of products processed and packaged in Ghana declined from 15% to 9% in the same time period.¹⁹ Opportunities therefore exist to increase Ghana's production of raw materials, as well as its local processing capacity, in order to address growing consumer demand for high-value products and feed Ghana's growth.



The infant cereal market provides an illustrative example of the opportunities that exist for local processing of goods. As mentioned earlier, Ghanaian infants have traditionally been fed porridges that are prepared by adding milk or water to locally produced fortified flours. This flour typically consists of a mixture of cereal grains such as maize or rice with legumes such as soybean or groundnuts, in a 4:1 ratio of cereal to legume.²⁰ As shown in **Figure 15**, this flour earns a significant premium when compared to

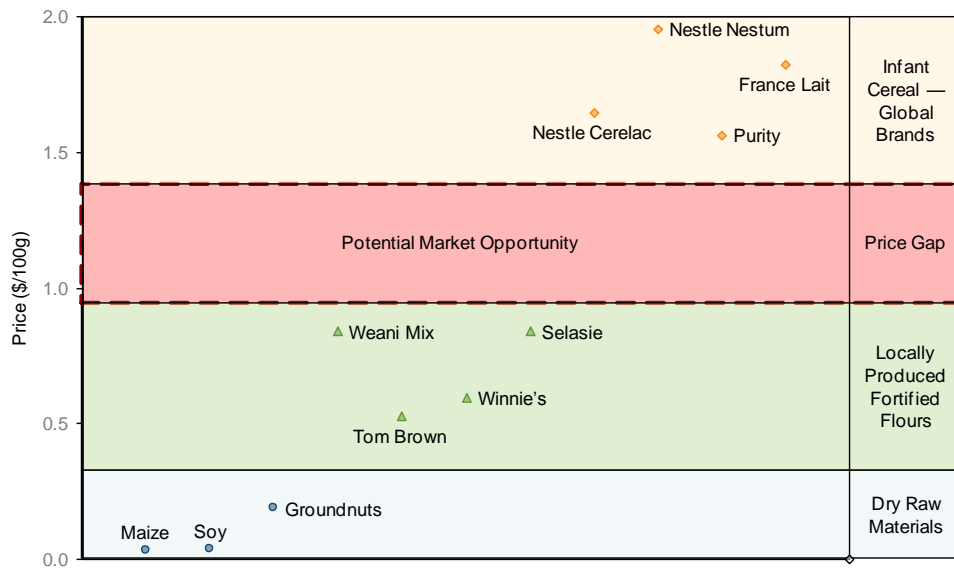
¹⁸ FAOSTAT; International Trade Centre.

¹⁹ Ghana Retail Food Sector, Global Agriculture Information Network, 2007.

²⁰ "Improving Child Nutrition Through Certification of Infant Food," International Growth Centre, 2011.

the price of dry raw materials. However, global brands such as France Lait and Nestle Cerelac are in increasing demand in Ghana's domestic market. At prices of at least \$1.50 per 100 grams, these products are approximately double the price of locally produced flour. However, consumers continue to show preference for these higher-priced products due to their better quality. There may therefore be an opportunity to meet this demand locally by pursuing opportunities in domestically produced infant cereals, sold at a price point that falls in between the price of imported infant cereals and the price of local fortified flours, as illustrated below.

Figure 15: Infant Cereal Market, 2012



Part 3: Status of Ghana's Agricultural Sector and Investment Landscape

3.1 Overall Sector Growth

From 2006 to 2010, growth in Ghana's agricultural sector averaged 4.5% per year. While this growth is slower than that experienced by Ghana's overall economy, which grew at 6.7% per year in this same timeframe, this trend is not unusual among developing countries. As labor shifts from the agricultural sector to the services and manufacturing sectors, these other sectors exhibit more rapid growth—which in turn increases

the economy's overall growth.²¹ In Ghana's case, expansion of the services sector between 2006 and 2010 was a key driver of economic growth.²² While the agricultural sector's contribution to national GDP has understandably decreased, it still accounts for 30% of national GDP and 51% of national employment—and thus remains a key driver of the Ghanaian economy. Indeed, as **Figure 17** shows, Ghana's agricultural GDP is the second largest within West Africa, trailing only Nigeria.²³

Figure 16: Average Growth of Agricultural Sector and National GDP, 2006–2010

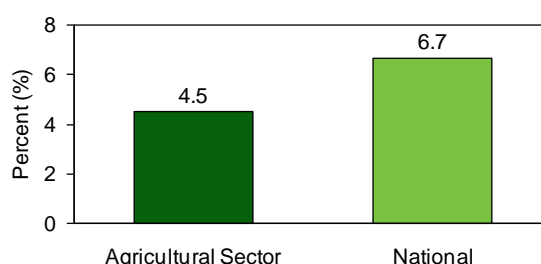
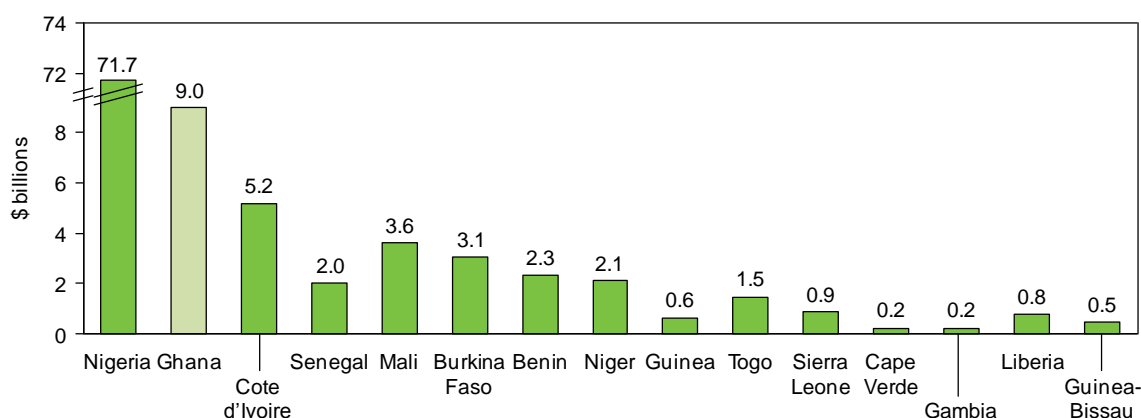


Figure 17: Agricultural GDP in ECOWAS Countries, 2009



3.2 Agriculture Policy Environment

Development of Ghana's agricultural sector is shaped by the Government of Ghana's agricultural strategy—the Food and Agriculture Sector Development Policy (FASDEP II)—as well as the implementation plan and investment framework for the strategy—the Medium-Term Agriculture Sector

²¹ Economic Development and the Decline of Agricultural Employment, Foster & Rosenzweig, 2008.

²² Agriculture Facts and Figures 2010, MoFA/Ghana Statistical Service.

²³ World Bank, World Development Indicators 2011; CIA World Factbook; International Monetary Fund, World Economic Outlook Database, September 2011.

Investment Plan (METASIP). Together, these two documents outline the Government's priorities with respect to sectoral growth: (1) food security and emergency preparedness; (2) increased growth in incomes; (3) increased competitiveness and enhanced integration into domestic and international markets; (4) sustainable management of land and environment; (5) science and technology applied in food and agriculture development; and (6) improved institutional coordination. The policy principles espoused in FASDEP include a focus on reducing poverty, attention to regional balance between northern and southern Ghana, gender inclusion, and environmental and social sustainability.²⁴ Within these frameworks, the Government of Ghana has defined a commercial agriculture agenda that focuses primarily on two pillars: **increasing incomes** and **increased competitiveness and market integration**.

The Government's Private Sector Development Strategy (PSDS II) has significant influence over the growth of Ghana's agricultural sector as well. PSDS II is a five-year strategy (2010–2015) encompassing private sector development across all sectors of the economy. The strategy's stated objectives are to improve the productivity and efficiency of Ghana's economy, build a thriving private sector that creates jobs and enhances livelihoods, and improve Ghana's competitiveness internationally. In the agriculture sector specifically, PSDS II aims to increase rural incomes by 20%, particularly in northern and central Ghana, through more productive agriculture; increased agricultural productivity and efficiency are also considered critical to developing a more robust private sector. A PSDS II board has been established with a mandate to ensure smooth implementation of the strategy. The board, which established a \$600 million Private Sector Development Fund to pursue this goal, is chaired by an executive from the private sector and includes representatives from private companies, the Government of Ghana, and development partners.

3.3 Market Conditions

Ghana is one of the most attractive destinations for agribusiness in sub-Saharan Africa due to a combination of agro-ecological advantages and favorable market forces:

Ease of doing agribusiness. Ghana performs quite well on the USAID's Agriculture Climate Legal and Institutional Framework (AgCLIR), an index that assesses the quality of the regulatory environment. Ghana scores positively on six of 10 indicators, with its strongest score being for "protecting investors."²⁵

Recognized advantage in cocoa production. The Ghanaian cocoa industry operates outside of the country's formal strategy and regulatory environment for the agricultural sector, instead coming under the auspices of the Ghana Cocoa Board. Still, cocoa sits at the heart of Ghanaian agriculture and is critical to the national economy. Along with gold and timber, cocoa is one of Ghana's "traditional exports," accounting for two-thirds of all agricultural exports.²⁶ Cocoa continues to serve as a powerful attraction for interested agribusiness, offering investors a proof point of the agricultural sector's capacity for large-scale production, even as it is done primarily through smallholder farmers.

Proximity to growing export markets. Situated on West Africa's coast, Ghana offers agribusinesses easy access to export markets in Europe at a lower cost than they might find

²⁴ Food and Agriculture Sector Development Policy (2010–2015), Ministry of Food and Agriculture.

²⁵ AgCLIR Ghana: Commercial Legal and Institutional Reform in Ghana's Agriculture Sector, USAID, 2009.

²⁶ Ibid.

elsewhere in Africa. With an international airport in Accra—as well as good and improving air freight connections to Europe, the U.S., and the Middle East—goods can be shipped in less than a day. In addition, Ghana’s two major seaports, in Tema and Takoradi, provide a means of shipping products by sea.

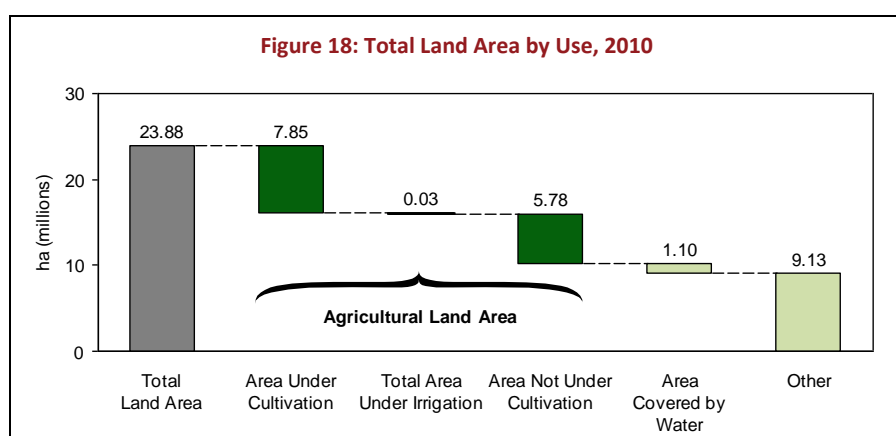
Investment incentives for agribusiness. The Ghana Investment Promotion Centre provides information on a range of incentives that are available to agribusiness investors establishing production and/or processing enterprises in the country. These include:

- A five-year tax holiday for agro-processing businesses, from the date of commencement of business
- A five-year assessment period for carrying farming losses
- Custom duty exemptions for agricultural and industrial machinery and equipment imported for investment purposes
- Corporate tax rates of 25% for the first three years of operations
- Location-based tax rebates for manufacturing industries located in regional capitals²⁷

3.4 Agro-Ecological Advantages

Ghana’s agricultural sector enjoys a number of ecological and climatic advantages that make it an attractive destination for agribusiness investment. Interested investors will find that the environment is well suited for the production of a wide range of food and industrial crops, including both ground crops and tree crops. Some of Ghana’s unique conditions include:

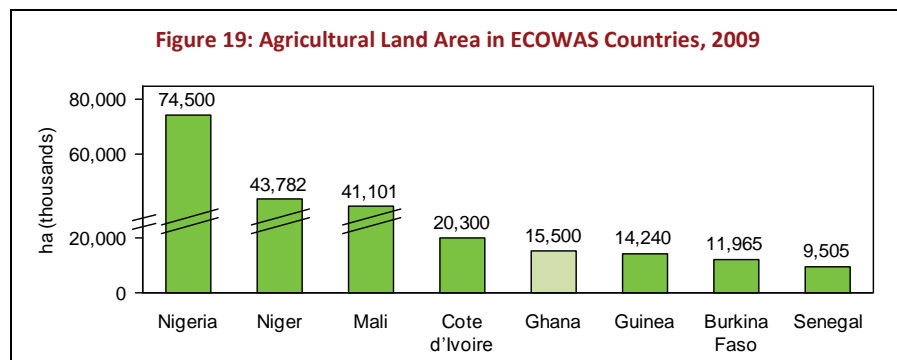
Large tracts of arable land. Ghana has more than 13 million hectares of agricultural land area, accounting for 57% of the country’s total landmass.²⁸ Of this, only 58% (7.8 million hectares) is currently under cultivation, leaving 5.7 million hectares of arable land available for development and cultivation. Ghana’s agricultural land area is the fifth largest in West Africa.²⁹



²⁷ Ghana Investment Promotion Centre.

²⁸ Agriculture in Ghana Facts and Figures, Ghana Survey Department and Ministry of Food and Agriculture, 2010.

²⁹ FAOSTAT.



Diverse agro-ecological zones. Ghana has six distinct agro-ecological zones, each with distinct climates, natural vegetation, and soil profiles, as detailed in **Figure 20**. In the two forest zones and the transitional zone, plentiful rainfall creates an ideal growing environment for cocoa, coffee, oil palm, and cashew. The coastal savanna zone is well suited for the production of staple crops (e.g., rice, maize, cassava) and horticultural crops (e.g., vegetable, mango, coconut), while sweet potato and soybean can also be cultivated under irrigation. The two northern savanna zones produce most of the country's rice, millet, sorghum, yam, tomato, and cotton. Livestock is also produced in these zones.

Figure 20: Agro-Ecological Zones of Ghana

Agro-Ecological Zone	Mean Annual Rain (thousands)	Major Growing Period (days)	Minor Growing Period (days)	Suitable Commodities
Rain Forest	2,200	150–160	100	Cocoa, coffee, oil palm, cashew
Deciduous Forest	1,500	150–160	90	
Transitional	1,300	200–220	60	
Coastal Savanna	800	100–110	50	Rice, maize, cassava, vegetable, sugarcane, mango, coconut, livestock, sweet potato, soybean
Northern Savanna				Rice, maize, soybean, millet, sorghum, yam, tomato, mango, cotton, cattle, sheep, goat
Guinea Savanna	1,100	180–200	N/A	
Sudan Savanna	1,000	150–160	N/A	

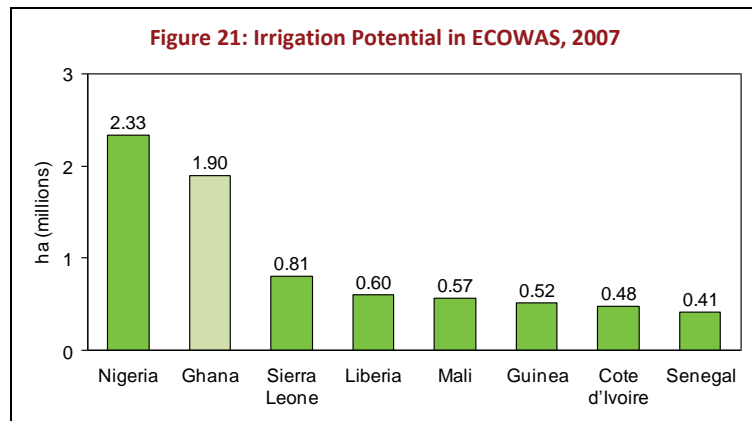
Potential for multiple harvesting seasons per year and intercropping. In the rain forest, deciduous forest, transitional, and coastal savanna agro-ecological zones, rain patterns allow for two distinct growing and harvesting seasons per year—and thus for greater yields of key commodities grown in these areas. Meanwhile, increasing usage of irrigation technologies and techniques is expanding the potential for multiple growing seasons in the northern savanna

regions. Additionally, most food crops, particularly those grown by smallholder farmers, are intercropped, allowing for diverse production.

Favorable agro-climatic conditions and topography. Ghana's climatic conditions are well suited for commercial agriculture, with temperatures relatively constant throughout the year due to its near-equatorial location. Additionally, Ghana's topography is predominantly undulating, with slopes of less than 1%.

Access to water in Lake Volta.

Lake Volta, the world's largest reservoir by surface area and fourth-largest by water volume, contains more than 30 trillion gallons of water. The lake forms the basis for Ghana's developing agricultural irrigation system and fisheries industry. With access to Lake Volta, Ghana has the second-largest potential irrigated area in the sub-region.³⁰



While climate change may potentially pose a threat to these agro-ecological advantages and the productivity of Ghana's agricultural sector, there are mitigating actions that can be employed to minimize this impact; indeed, some of these are already in place. Climatic projections indicate warming in all regions in Ghana, with temperature increases ranging from 1.7 to 2.4 degrees Celsius by 2050. Precipitation forecasts predict cyclical patterns across the country with high rainfall levels followed by droughts. Given Ghana's reliance on rain-fed agriculture and its current lack of irrigation facilities, losses in agriculture could reach as much as \$122 million per year by 2050 without precautionary interventions.³¹

Private sector investors are well positioned to take advantage of a range of initiatives being implemented by the Government of Ghana and its development partners to mitigate the consequences of climate change as well as other agricultural challenges. These developments include:

- Increased investment in agricultural research and development to produce adaptive crop varieties and livestock breeds, coupled with extension services to increase adoption of these varieties by farmers
- Improvements in water storage capacity to allow excess water in wet seasons to be used in dry seasons, as well as the construction of small- to mid-size irrigation facilities to extend water access to dry areas
- Increased access to loans and credit to enable farmers to purchase these improved inputs and participate in development of water storage as described above

³⁰ AQUASTAT, Food and Agriculture Organization of the United Nations, 2007.

³¹ "Economics of Adaption to Climate Change," World Bank; Department for International Development; Swiss Agency for Development and Cooperation; Government of Netherlands Ministry of Foreign Affairs, 2010.

Further details on these and other government programs are provided in Part 5 of this document.

3.5 Commodity Production, Import, and Export

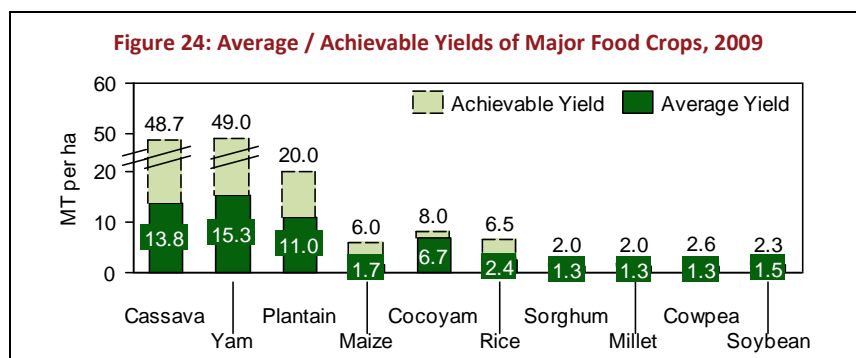
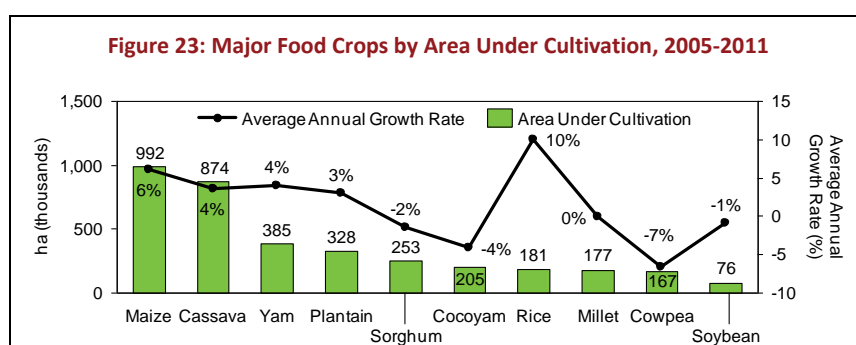
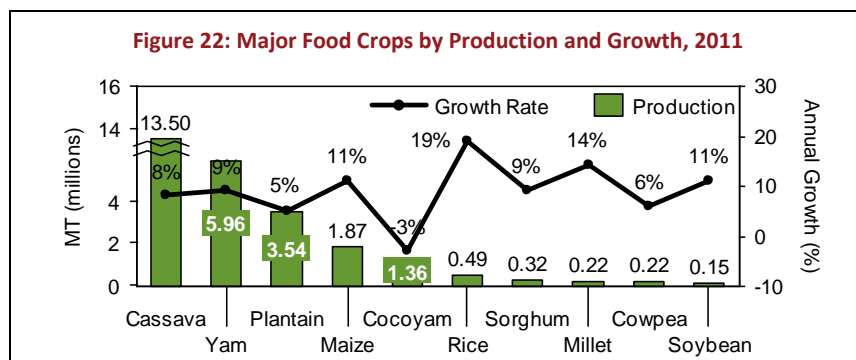
3.5.1 Production

Food crops account for the greatest utilization of Ghana's arable land and the majority of Ghana's agricultural production. Maize and cassava are by far the two most widely grown crops, while yam, plantain, sorghum, cocoyam, rice, millet, and cowpea are each cultivated on between 150,000 and 400,000 hectares.³² Rice, millet, maize, and cassava are the fastest-growing crops in terms of both cultivated area and production. The vast majority of Ghana's food crops are produced primarily for domestic consumption.

Most key staple crops—excluding millet, sorghum, cocoyam, and plantain—recorded strong increases in production in 2010, averaging 13.7% growth. This growth is partially due to the adoption of new technologies and the use of improved seeds by farmers.³³

Still, nearly all food crops under production in Ghana today demonstrate significant potential for yield improvements through greater adoption of irrigation, better agronomic technologies, and effective extension services, as shown in **Figure 24**.

Agriculture is predominantly done on a smallholder farmer basis in Ghana. Approximately 90% of farm holdings are less than 2 hectares in size; the large farms and plantations that do exist primarily produce rubber, oil palm, and coconut, although some produce rice, maize, and pineapple as well.

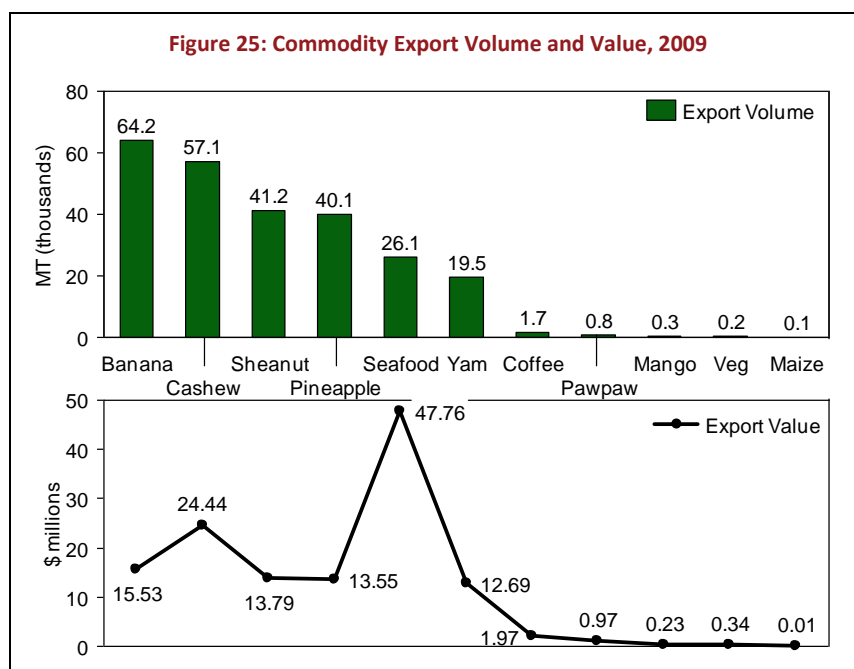


³² Statistics Research and Information Directorate, MoFA.

³³ Ghana Shared Growth and Development Agenda.

3.5.2 Export

Cocoa is Ghana's predominant agricultural export; in 2010, cocoa exports were valued at \$975 million, nearly one-quarter of Ghana's total export value across all sectors. Aside from cocoa, horticulture and industrial crops constitute the majority of Ghana's agricultural exports, which totaled \$131 million in 2010.³⁴ Cashew, sheanut, pineapple, banana, and fish products are the most widely produced export crops; however, in the past two years, exports have declined in both volume (in 2009, by 27.1%; in 2010, by 13.6%) and value (by 18% and 0.8%, respectively).³⁵



Increasing export crops' competitiveness and improving Ghana's integration into domestic and international markets are key areas of focus for the Government of Ghana. MoFA has introduced a number of strategic initiatives in collaboration with other partners to increase export quantities and ensure that Ghana's horticulture is competitive on a global scale.

3.5.3 Import

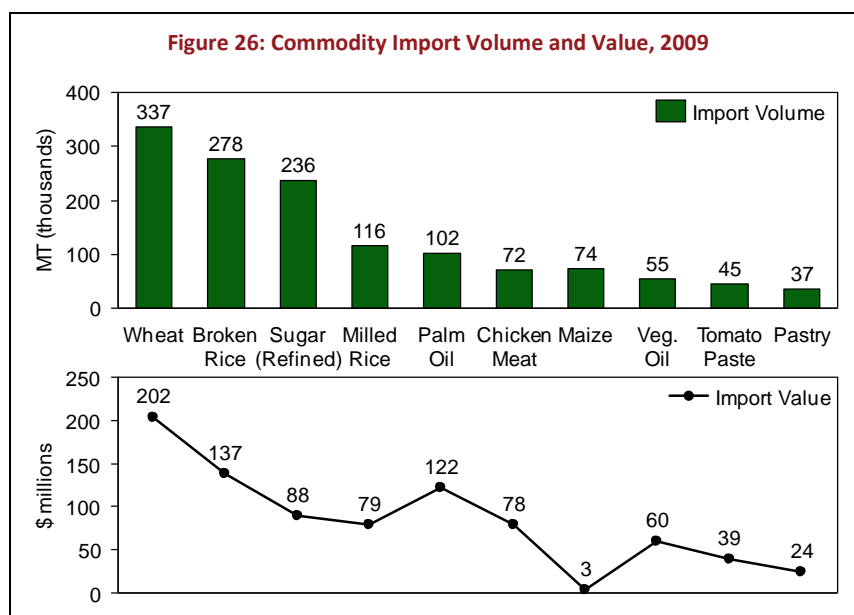
While Ghana is nearly fully self-sufficient in most staple crops, it remains a significant importer of rice, sugar, palm oil, wheat, and poultry, among others, as illustrated in **Figure 26**. While rice is one of the most widely grown crops in the country, demand far exceeds supply, requiring significant import volumes, primarily from Southeast Asia. Ghana imported more than \$200 million worth of rice in 2009; average annual imports of rice range from 300,000 to 400,000 metric tons per year.³⁶ With local demand for rice on the rise, this total is expected to increase unless local production increases significantly. Indeed, reducing the country's dependence on imported rice is a key focus of the Government's agricultural development strategy. Ghana's leading import sources are the U.S., China, France, Belgium, the UK, South Korea, and South Africa.³⁷

³⁴ Ibid.

³⁵ Statistics Research and Information Directorate, MoFA.

³⁶ FAOSTAT.

³⁷ Ibid.



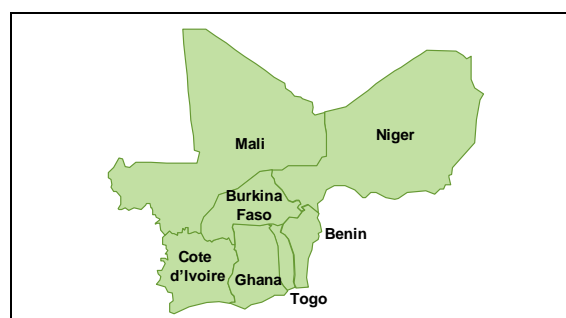
3.6 Landscape for Investment in Northern Ghana

Ghana's three northernmost regions—spanning a distinct agro-ecological zone termed the Northern Savanna—have gained increasing attention from the Government of Ghana and its development partners. The region has significant potential to produce key food crops for both local consumption and export; indeed, northern Ghana has been identified as a potential breadbasket for agricultural development.³⁸ However, this potential has yet to be fully realized. The region contains its own unique conditions that make it an attractive destination for agricultural investment. In addition, the fact that developing northern Ghana remains a Government and donor priority means that investors will find significant support for investment in the region.

3.6.1 Market Rationale for Agriculture Investment in Northern Ghana

Access to Sahel markets. In addition to producing key staple crops for domestic consumption, northern Ghana has the potential to serve as a center for commercial agricultural export to markets in the Sahel region, which have a combined 2011 GDP of more than \$62 billion (excluding Ghana).³⁹ Northern Ghana is well suited for trade with countries in the Sahel region due to proximity, a better climate for production, and similarities in food culture.

Figure 27: Sahel Region (SADA definition)



³⁸ Alliance for a Green Revolution in Africa.

³⁹ Defined as: Burkina Faso, Mali, Niger, northern Cote d'Ivoire, northern Togo, and northern Benin; IMF World Economic Outlook, September 2011.

Comparative advantage in crop production. As shown in **Figure 28**, Ghana's northern regions are responsible for the majority of the country's total production of many key value chains, reflecting their comparative advantage for agricultural production.⁴⁰ These value chains—including rice, sorghum, millet, yam, cassava, groundnut, cowpea, soybean, and livestock—are all integral to domestic consumption. Private sector investment in the modernization of agricultural inputs and techniques in northern Ghana has the potential to enable this region to feed the rest of the country.

Availability of arable land. Northern Ghana consists of 100,000 square kilometers of land, nearly 40% of the country's total land area. Of this, 6.1 million

hectares are considered agricultural land; however, only 1.54 million hectares (25%) were under cultivation as of 2007.⁴¹ Ghana's northern regions have a wealth of underutilized, well-endowed land—including a network of river basins and fertile valleys—that can support intensified agriculture modernization. The basins surrounding the Volta and Sissili rivers—as well as the Fumbisi, Nasia, Tamme, Katanga, Naboggu, and Soo valleys—all have the potential for significant agricultural production. Moreover, northern Ghana's relatively low population density means that there is potential for agricultural production growth through both land expansion and production intensification. Smallholder farmer territory in northern Ghana is larger than in the rest of the country. While the typical smallholder farmer in Ghana farms

Figure 28: Agricultural Contribution to National Total, by Agro-Ecological Zone

Commodity	Contribution to National Total, by Agro-Ecological Zone			
	Coast	Forest	Southern Savannah	Northern Savannah
Cereals	13.2	24.5	28.3	34.0
Maize	22.2	32.9	30.6	14.3
Rice	13.4	43.9	5.0	37.7
Sorghum and Millet	0.1	1.5	37.7	60.7
Roots	3.8	31.8	32.6	31.8
Cassava	4.1	25.2	45.3	25.4
Yam	2.8	32.3	25.2	39.6
Cocoyam	8.2	60.4	17.2	14.2
Other Staples	8.9	29.9	31.6	29.6
Cowpea	0.5	9.9	10.4	79.2
Soybean	0.0	10.6	24.8	64.6
Plantain	13.2	54.2	25.1	7.6
Groundnut	7.7	9.5	7.2	75.6
Fruit (Domestic)	8.8	36.5	8.7	46.0
Vegetable (Domestic)	8.5	25.7	44.5	21.3
Non-traditional Exports	30.4	33.9	25.1	10.6
Cocoa	2.6	68.9	28.5	0.0
Livestock	12.1	35.1	14.2	38.6
Chicken Broiler	19.2	40.0	36.4	4.5
Eggs and Layers	37.0	39.0	5.0	19.0
Beef	7.1	16.3	6.4	70.2
Sheep and Goat Meat	12.7	39.5	11.8	36.0
Other Meat	3.7	41.5	24.4	30.5
Forestry	1.0	68.6	29.1	1.4
Fishing	61.5	10.7	24.4	3.4

⁴⁰ "Agriculture for Development in Ghana: New Opportunities and Challenges," IFPRI Discussion Paper, 2008; SADA Strategy and Work Plan, December 2010.

⁴¹ SADA Strategy and Work Plan, December 2010.

approximately 2 hectares, the average smallholder territory in northern Ghana ranges from 2.7 hectares in the Upper West Region to 5.6 hectares in the Northern Region.

Existence of market-development nucleus. The Integrated Tamale Fruit Company (ITFC), a large horticulture producer headquartered in Tamale and active throughout northern Ghana, serves as an anchor for the development of smallholder production and a source of knowledge for developing agribusiness support services. ITFC is a success story for other investors interested in developing commercial agriculture in Ghana.

3.6.2 Government and Donor Support for Investment in Northern Ghana

To date, Ghana's economic development has not been evenly distributed: there remains a wide gap in economic development between southern and northern Ghana. On nearly every indicator of the Millennium Development Goals, progress in Ghana's northern regions has lagged behind development in the south. Most critically, while the percentage of the Ghanaian population living in poverty was reduced by more than half between 1991-92 and 2005-06, the benefits of economic growth have not been experienced to the same extent in the northern regions; the share of population living in poverty in the north decreased by only 9% over the same period.⁴² This growing disparity between northern and southern Ghana is the result of increased economic activity spurred by development of the agriculture, services, and manufacturing industries in southern Ghana. Particularly with respect to agriculture, the hallmarks of modernization—improved agronomic practices, increased access to quality inputs, mechanization, and irrigation—have taken root in southern Ghana to a degree not yet seen in northern Ghana.

In response—and as mentioned above—the Government of Ghana and its development partners are now emphasizing the development of the northern regions as part of Ghana's national agenda for economic growth. The Savannah Accelerated Development Authority (SADA), created by an act of Parliament in 2011, will be responsible for enacting a development strategy for Ghana's three northern regions as well as contiguous districts in the bordering Brong-Ahafo Region (also termed the "SADA zone"). SADA will also coordinate Government and donor activities related to economic development.

The SADA strategy is based on a vision of a "Forested North and Green North," where agriculture production is modernized and oriented toward a larger market embracing the Sahelian countries and investments are made to capitalize on the north's substantial growth potential in agriculture, tourism, and mining.⁴³ Given the centrality of agriculture to northern Ghana's economic potential, SADA has identified "modernization of agriculture" and "private sector development" as two critical pillars in its strategy for transforming northern Ghana. The modernization of agriculture pillar defines six entry points for poverty reduction in the SADA zone:

- A **marketing-based out-grower system** that defines the shape of existing and expanded markets to propel the emergence of the SADA zone's growing private sector and increase the capability to engage producers in a way that responds to market demands.
- **Tree crop production** as a source of income to empower the poor, build their assets, and enhance the capacity to invest in production activities. Farmers will be encouraged to

⁴² SADA Strategy and Work Plan, December 2010, citing Millennium Development Goals progress; World Bank Poverty Assessment.

⁴³ SADA Strategy and Work Plan, December 2010.

intercrop tree crops with groundnut, cowpea, or soybean to ensure productivity while waiting for tree crops to mature.

- **Productivity improvement of selected staple crop production systems** to increase the SADA zone's competitiveness in supplying the sub-regional market. Crops will be selected on the basis of market demand and potential to generate agro-industrial activity.
- **Horticulture production to diversify into export agriculture**, which has been a source of significant poverty reduction among farmers in southern Ghana.
- **Semi-intensive production of small ruminants, pigs, and guinea fowl** to diversify farm income sources and provide income opportunities in areas where land for crop production is scarce.
- **Development of agro-processing** as a source of demand for raw materials to drive value chains and contribute to gender equity objectives, as processing is typically a women-centric activity.

Within the private sector development pillar, three strategic objectives have been defined:

- Positioning the SADA zone as a **competitive economic zone in the Sahel region**
- **Expanding the scope of private sector firms investing in value-addition in the SADA zone;** in particular, promoting the export and marketing of high-value fruits and vegetables
- **Empowering northern Ghanaians to participate in commercial agriculture-related economic activity** through training, entrepreneurial development, and business development services, including the creation of a venture capital facility for northern Ghana

Given the Government's commitment to the development of the SADA zone, private sector investors can expect significant Government support. Programs dedicated to the development of commercial agriculture in northern Ghana can provide technical assistance to investors, particularly through organizing out-grower schemes, establishing irrigation schemes and developing other enabling infrastructure, and the provision of training and extension services to smallholder farmers.

Examples of current Government and donor support programs targeting the commercialization of agriculture in northern Ghana include:

- The **Ghana Commercial Agriculture Project (GCAP)**, co-funded by the World Bank and USAID, will include support for the identification and realization of private investments in inclusive commercial agriculture projects through public-private partnerships, complementary public investments, and technical assistance in the SADA zone.⁴⁴ To date, \$64.3 million has been committed to the development of public-private partnerships and smallholder linkages in the SADA zone. Specific GCAP activities will include:
 - Capacity building for smallholder and nucleus investors to expand out-grower schemes through the provision of targeted technical advisory services and startup matching grants. This capacity building and technical assistance will help private

⁴⁴ GCAP Project Appraisal Document, World Bank, February 2012.

sector investors and commercial agriculture operators improve farmers' productivity and yield consistency.

- Facilitating investment in land development and supporting essential land preparations such as land clearing and leveling, water management interventions, and the construction of farm roads and farm buildings at nucleus farms. This will reduce investors' initial capital outlays for setting up large-scale commercial production in Ghana.
 - Financing for the construction of storage infrastructure and processing facilities, including the rehabilitation of state-owned storage facilities.
 - Support for business development through matching grants to strengthen the capacity of farmer based organizations, input dealers, mechanization centers, processors, and other agricultural service providers.
 - Under GCAP, the UK's Department for International Development (DFID) is collaborating with the World Bank to provide capacity building support for the SADA Authority and to develop market interventions that support small and medium-scale business development in the SADA zone.
- **Linking Farmers to Markets** is a three-year AGRA/IFDC program in northern Ghana, working to develop new commercial linkages between farmers, traders, marketing companies, processors, and institutional buyers. The program provides training to farmers and small and medium-size enterprises and builds long-term relationships with national, regional, and international produce purchasing companies.⁴⁵ The program is expected to improve smallholder farmers' skills in order to ensure they provide crops that meet traders' and agro-processors' quality standards.
 - **ADVANCE** is a four-year USAID-sponsored project to facilitate the transformation of Ghana's agricultural sector through increasing farmer incomes, driving the emergence of a commercial agricultural class, improving services to the main value chain actors, and contributing to economic growth and poverty reduction.⁴⁶
 - The IFAD **Northern Rural Growth Program** works with the rural poor to develop income-generating agricultural activities and provides support in linking them to markets in southern Ghana and abroad.⁴⁷

⁴⁵ IFDC website; stakeholder Interviews.

⁴⁶ Stakeholder Interviews.

⁴⁷ Ibid.

Part 4: Investment Opportunities in Ghanaian Agriculture

In recent years, private investment in Ghana's agricultural sector has increased substantially. Led by large investments by multinational corporations such as Olam (see "Success Story" sidebar) and Nestle, registered investments in the sector increased from \$109 million in 2009 to \$513 million in 2011.⁴⁸ These numbers are likely to multiply as more and more opportunities for private sector investment in Ghanaian agriculture are identified. The following sections call attention to several strong investment-ready opportunities in this expanding sector, organized by the timeframe appropriate for these investments. The methodology through which these opportunities were uncovered is also shared below.

Success Story: Olam Ghana

Olam established operations in Ghana in 1994; it now has nine offices throughout the country, with headquarters in Accra. Olam is one of the country's largest private licensed buying companies for cocoa, its leading cashew exporter, and its leading importer of rice, sugar, tomato paste, and palm oil.

The company started off trading cashew. Given Olam's confidence in the political environment in Ghana, it made further investments, including the purchase of a biscuit mill and a tomato paste processing facility, and a \$55 million investment in a wheat processing factory in Tema, opened in February 2012.

Olam recently expanded its activities in the cashew value chain and is in the process of setting up a facility that will process 25,000 metric tons of cashew per year, sourcing cashew from 26,000 farmers.

Olam was recently selected by the Government of Ghana to carry out extension farming in the Upper West Region in a bid to revamp the cotton sector and improve the livelihoods of the region's smallholder farmers. The company has already engaged more than 8,500 farmers, providing key inputs such as seed, fertilizer, insecticide, plows, and tractors. Olam is also rehabilitating cotton ginning facilities with a capacity of 60,000 metric tons and considering establishing new facilities as well, with the ambition of reaching 100,000 metric tons by 2015.

Other investments being pursued by the company relate to doubling the total value of small loans to farmers, which currently stand at \$170 million.

In 2011, Olam was awarded the "best taxpayer award" by the Ghana Revenue Authority, for compliance to tax and corporate governance. The company also acts as an ambassador to help the Government of Ghana attract investments into the country. Within Ghana, Olam is a member of the Association of Ghana Industries and an advocate against cocoa smuggling.

⁴⁸ Ghana Investment Promotion Centre.

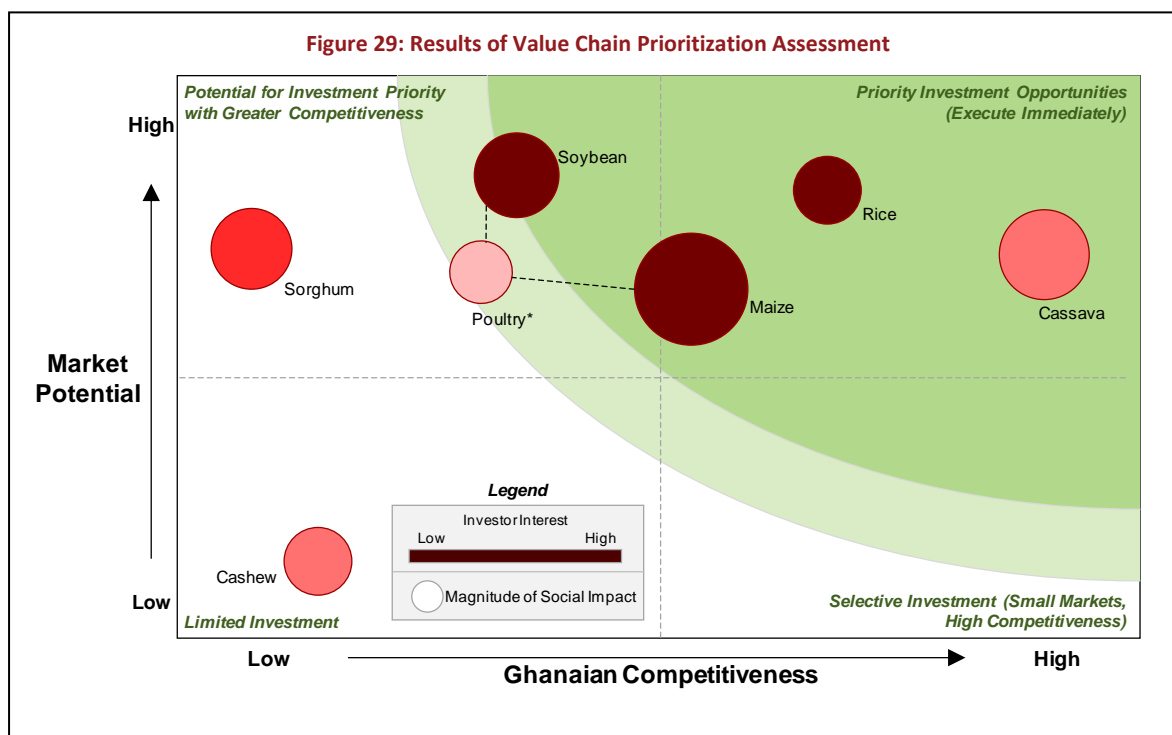
4.1 Methodology for Value Chain Prioritization

In order to determine which agricultural value chains hold the strongest private sector interest, more than 65 local, regional, and global investors were interviewed. The output from these interviews was supplemented with information from a Government database of more than 50 additional projects being run by either existing agribusinesses or prospective investors with an interest in Ghanaian agriculture. Various Government agencies and donors were also consulted so that public sector priorities could be evaluated as well.

Ultimately, seven value chains proved particularly attractive to private investors: cashew, cassava, maize, poultry, rice, sorghum, and soybean. All of these value chains receive significant support from the Government and the donor community due to their impact on economic development and poverty alleviation. This support takes the form of programs that improve farmer productivity, link farmers to off-takers and end markets, and support the development of inclusive business models.

Next, an assessment of the investment-readiness of opportunities within these value chains was made in order to differentiate which are suited for the short term and which are more suited for the medium term. The seven value chains were evaluated across three key criteria: (1) market potential, (2) Ghana's regional and global competitiveness, and (3) investor outlook. This analysis was then overlaid with evaluations of the potential social impact of prospective investments in these value chains, as well as their linkages to Ghana's northern regions.

As illustrated in **Figure 29** below, cassava, maize, and rice emerged as priority value chains for investment in the short term. The attractiveness of opportunities in soybean, poultry, sorghum, and cashew will rest upon the ability to improve competitiveness within these value chains in the medium term. (Further detail on the methodology for value chain prioritization can be found in **Appendix 1**.)



4.2 Short-Term Investment Opportunities

The following section summarizes the selection rationale for the three value chains prioritized for short-term investment. It also offers high-level descriptions of illustrative investment opportunities associated with each value chain; these opportunities mainly serve the domestic market.

Rice

Market potential: Currently, Ghanaians consume roughly 862,000 metric tons of rice per year. From 2005 to 2009, total annual domestic consumption of rice grew 3.6% per year; this upward growth is expected to continue, with 2015 demand estimated between 1.2 million and 1.65 million metric tons—five to seven times larger than 2009 domestic production.⁴⁹ Increasing urbanization and income levels are driving a notable shift in consumer preference from maize to rice as a source of starch. More affluent Ghanaian consumers show a strong preference for aromatic straight-milled rice; local non-aromatic parboiled rice is considered to be of inferior quality and is mainly consumed by poorer households.⁵⁰ Rice imports, primarily from Southeast Asia and the United States, account for approximately 75% of total consumption; domestic supply has not yet been able to meet demand despite 13.5% per year growth in production. Importantly, demand for rice is growing steadily both regionally (6.2% per year) and globally (1.9% per year).⁵¹

Competitiveness: Rice yields in Ghana are 26% higher than regional averages but lag behind global yields, which are at least 1.5 times higher. At \$506 per metric ton, local prices are 2% higher than global prices even though local rice (60% of which is parboiled) is considered inferior in quality. Local rice is parboiled to repair cracked and brittle grains and reduce breakage during milling. This is an additional cost to processors but does not earn a premium over straight-milled rice, thereby reducing the competitiveness of local rice against imports from Southeast Asia. From a regional perspective, Ghanaian farm-gate prices are, on average, 20% higher than those found in other West African countries. This is at least partly due to the fact that local rice is generally of a better quality than the rice produced throughout the West African region.

Investor outlook: There is high interest from investors in rice production due to the significant potential that exists in import substitution to serve the domestic market. The Indian group Avnash Industries Ghana Ltd. has plans to set up three rice mills in Tamale, Bolga, and Pombussi over the next two years, with a combined processing capacity of 5.4 million metric tons of rice per year. The company is looking to contract farmers on an out-grower basis to supply rice to their processing facilities.

Social impact: Investments in rice have the potential to increase incomes for the 80,000 farmers who currently cultivate this crop, as well as for the thousands of women in northern Ghana who take part in the paddy parboiling process. Indeed, further investments in this value chain are expected to contribute to the empowerment of women, as women are reported to dominate the trade and on-farm labor of rice.

Northern linkage: With northern Ghana accounting for 60 to 70% of rice production, investments in this value chain stand to play a role in alleviating poverty in these regions.

⁴⁹ “Breadbasket Transformation of Ghana’s Northern Region,” AGRA, July 2010.

⁵⁰ “The Market for Maize, Rice, Soy, and Warehousing in Northern Ghana,” USAID, January 2012.

⁵¹ FAOSTAT.

Illustrative Investment Opportunities

In the near term, opportunities exist to invest in rice production and processing, primarily of non-aromatic, low-quality (high-percentage broken) rice as a means of import substitution. In the medium term, production quality will increase, creating opportunities to produce and process higher-quality (lower-percentage broken) rice to further replace imports.⁵² Specific opportunities identified include:

- Commercial production of rice, soybean, and maize on a 3,000 hectare nucleus farm with accompanying out-grower scheme involving 6,000 smallholder farmers on 10,000 hectares of land in Ejura, Brong-Ahafo
- Provision of cleaning and warehousing services for rice and maize producers in the SADA zone
- Investment in large-scale commercial rice milling operations in northern Ghana

Maize

Market potential: Growing domestic consumption and the use of maize as feed stock for the poultry market point to a number of opportunities for investment in this value chain. Total annual domestic maize consumption stands at 1.8 million metric tons and is met almost entirely by local production. Of this total, 63% is consumed by humans, 23% serves as a key input into the animal feed market, and the remaining 14% is used in industrial processing (breweries, beverage producers) or the production of processed foods such as flour.⁵³ Domestic per capita consumption of maize has been decreasing due to urban households' preference for rice, which is easier to prepare. However, this trend has been offset by population growth; from 2005 to 2009 local demand for maize grew at 8% per year, and domestic demand in 2015 is projected to be more than 2 million metric tons.⁵⁴ The poultry industry, which is dominated by "layers," is the largest consumer of animal feed maize. While white maize is more widely produced, yellow maize is preferred in this market segment as it contributes to a more pronounced yolk color. Regional and global consumption is growing by 6.6% and 3.6% per year, respectively. However, stringent export licenses and caps on exports in times of food shortage have limited Ghanaian producers' access to export markets.

Competitiveness: Ghanaian maize competes favorably within the West African region. Production yields are on par with regional yields at 1.9 metric tons per hectare; similarly, domestic farm-gate prices, at \$384 per metric ton, are only 2.7% higher than regional averages. However, Ghana's maize has not yet achieved global competitiveness: global yields are approximately three times higher than domestic yields, while local farm-gate prices exceed global averages by 22%. There is potential to enhance global competitiveness through the use of improved seeds and fertilizers, which could result in yield improvements of over 23% and significantly reduce the costs of production.

Investor outlook: Surveyed investors showed high interest in the maize value chain. Their interest/activity was concentrated in processing and primary production, with a few engaged in the supply of improved seeds.

⁵² "The Market for Maize, Rice, Soy, and Warehousing in Northern Ghana," USAID, January 2012.

⁵³ Ibid.

⁵⁴ "Breadbasket Transformation of Ghana's Northern Region," AGRA, July 2010.

Social impact: Investments in maize cultivation stand to improve the incomes of the roughly 320,000 smallholder farmers involved in maize cultivation, including many female maize farmers who frequently manage their own fields and have full discretion over the disposal of harvest.

Northern linkage: Approximately 25% of maize produced in Ghana—438,000 metric tons—comes from the SADA zone, including SADA districts in the Brong-Ahafo and Volta regions.

Illustrative Investment Opportunities

- Import substitution of yellow maize for poultry feed
- Investment into a startup 10,000 hectare commercial maize operation in Volta Region
- Investment into high-yield certified maize seed producers to expand production and processing operations in northern Ghana
- Intercropping of maize with cotton to optimize innovative cultivation techniques that have been developed to rehabilitate soil that has hardened due to inefficient plowing practices

Cassava

Market potential: Investment opportunities have emerged in the cassava value chain due to its role as a key carbohydrate source for households throughout sub-Saharan Africa and, more recently, as an ingredient for breweries. Cassava is the second most important source of carbohydrate in sub-Saharan Africa after maize, consumed by approximately 500 million people every day. Given its adaptability to a variety of climate conditions, the crop has the potential to play an important role in food security on the continent in the future. Due to recent innovations by large breweries such as Diageo and SABMiller, processed cassava—in cake, flour, or syrup form—is being used as an input into beer. From 2005 to 2009, local and regional consumption of cassava increased by 6.4% and 0.3% per year, respectively. Global consumption has grown steadily at 3.4% per year, driven by the use of cassava as a starch substitute for crops such as potato and wheat. Domestic production currently stands at 13.5 million metric tons per year and is growing at 6.4% per year, creating adequate supply to meet this growing demand.

Competitiveness: Cassava yields in Ghana are 20 to 30% higher than regional and global averages; importantly, the use of improved agronomic practices and mechanization could result in further yield increases of up to 200%. Ghana's high cassava yields also result in lower unit costs of production. At \$144 per metric ton (PMT), Ghanaian cassava prices are significantly lower than regional (\$231 PMT) and global (\$406 PMT) averages.

Investor outlook: Investors showed moderate interest in this value chain, primarily concentrated in cassava processing.

Social impact: Investments in cassava processing have the potential to improve the incomes of the roughly 170,000 smallholder farmers currently engaged in its cultivation not only by providing a market for their produce but also by preventing post-harvest losses of this highly perishable root. Cassava currently accounts for approximately 22% of agricultural GDP and is the most widely cultivated crop in Ghana.

Northern linkage: There is a direct linkage to approximately 17,000 smallholder farmers in the northern regions, primarily in the cassava-growing districts of Damango, Mbimbila, Yene, Ankwanta, and Salaga.

Illustrative Investment Opportunities

- Installation of mobile autonomous processing units that enable intermediary processing of cassava into cake at harvesting sites to prevent post-harvest losses
- Introduction of flash-drying technology to improve the efficiency of domestic cassava flour processing methods and subsequently reduce the costs of production

4.3 Medium-Term Investment Opportunities

In addition to the short-term opportunities outlined above, analysis revealed other opportunities more suitable for investment in the medium term. These medium-term opportunities include greenfield investments in the primary production and processing of commodities: (1) for which Ghana has demonstrated significant potential for production; (2) for which there is growing local demand; and/or (3) with significant potential to become competitive with imports. Opportunities in these value chains may require additional development in order to be commercially viable.

Cashew

Market potential: There is growing interest in cashew cultivation due to large increases in demand and a flourishing export market. Local, regional, and global consumption have all been increasing at an average rate of 3% per year. Roughly 98% of Ghana's cashew production is exported as raw cashew nut (RCN), the largest importer of which is India. In 2008, Ghana produced approximately 26,000 metric tons of cashew and imported an additional 35,590 metric tons from neighboring countries in West Africa, ultimately exporting 61,590 metric tons of RCN valued at \$45.37 million (6% of GDP) for processing. Production in Ghana continues to grow at 3.4% per year.

Competitiveness: West Africa has a global competitive advantage in RCN and supplies half of global demand. As such, Ghana has been able to secure off-take of all its RCN even though local cashew farm-gate prices, at \$628 per metric ton, are 44% higher than other countries in the region (yet still only 26% of the global price). There are, however, further opportunities to be explored in cashew processing. Ghana currently has a limited processing capacity of 2,100 metric tons per year, although this is expected to increase considerably following the commissioning of Olam's 25,000 metric ton per year processing facility. Perhaps due to the lack of economies of scale, average retail prices of locally processed cashew are higher than both regional prices and the price of Asian imports. Unless prices are reduced considerably, the local market for processed cashew will continue to be dominated by imports.

Investor outlook: Investors demonstrated moderate interest in this value chain, with activities concentrated in aggregating and exporting RCN. However, there is increasing interest in processing cashew in order to capture more value-addition locally.

Social impact: It is believed that investments in the cashew value chain can contribute to pro-poor economic growth by improving the incomes of the roughly 70,000 smallholder farmers currently involved in cashew cultivation and generating more than 200,000 permanent and seasonal jobs, particularly for farm laborers and intermediaries. RCN harvesting and marketing activities occur during the four-month "lean season" and therefore provide buffer cash flows to smallholder farmers who intercrop cashew with staples such as maize.

Northern linkage: Cashew production occurs primarily in Ghana's northern regions, creating a direct linkage to northern economic development.

Illustrative Investment Opportunity

- Developing efficient cashew sourcing networks across Ghana in order to supply processors in local and export markets

Poultry

Market potential: Rising domestic incomes have created increased demand for animal protein, thus opening investment opportunities in both poultry meat and eggs. In Ghana, domestic consumption of poultry is increasing rapidly at roughly 13.9% per year. While local production is growing at a comparable rate of 14.1%, Ghana's local production is dominated by "layers" rather than "broilers." On a regional and global level, consumption rates have also shown steady growth at 6.9% per year and 4.1% per year, respectively.

Competitiveness: Ghana's broiler farm-gate prices (approximately \$2,600 per metric ton) are 27.8% lower than regional prices; however, they are approximately double the prices in Brazil (\$1,327 per metric ton) and the United States (\$1,380 per metric ton). The high costs of maize and soybean—key feed ingredients for poultry—have driven the cost of domestic poultry upward, as feed accounts for approximately 70% of production costs for poultry. Ghanaian broilers are not just globally uncompetitive in terms of price, but also tend to be of inferior quality to imports with more tender meat. Frequent disease outbreaks in the past have also stifled the market, such that Ghana is now almost entirely reliant on imports from the U.S., Europe, and Brazil; imports account for 90% of local consumption. In contrast, "layer" production has been relatively successful in Ghana and continues to experience steady growth, as the perishable and fragile nature of eggs makes them unsuitable for import.

Investor outlook: Investors demonstrated moderate interest in the poultry market. While those that are currently active in the value chain are engaged in the production of layers, many had intentions to pursue opportunities in broiler production once this became more viable.

Social impact: Investments in this value chain will play a very important role in the livelihoods of rural poultry farmers, who contribute 60 to 80% of the national poultry population; such investments will also improve the livelihoods of maize and soybean farmers by providing a market for their produce.

Northern linkage: While most broiler and layer production takes place outside of the northern regions, poultry has an indirect impact on economic development in northern Ghana; soybean and maize—the main components of poultry feed—are both produced in the region.

Illustrative Investment Opportunity

- There is high potential for import substitution of broilers, as imports currently supply roughly 62% of consumption. However, the costs of production would need to be reduced significantly in order for locally produced poultry to compete with imports. This will require scaling up the production of maize- and soybean-based animal feed.

Sorghum

Market potential: Sorghum is being increasingly consumed by humans and animals as a substitute for maize; it also serves as a barley substitute for breweries. Sorghum is a major staple crop in the northern regions, with its yields primarily used for human consumption. Some Ghanaian households have expressed a stronger preference for sorghum over maize. This sorghum-maize substitution is also possible in animal feed, although there are some concerns regarding the nutritional value of sorghum.

Breweries across Africa, including Guinness Ghana Breweries, have shown increased interest in replacing barley with sorghum in order to localize supply chains and become more cost effective; white and yellow sorghum are preferred for this purpose, as red and brown varieties have more tannins and create a bitter taste and cloudiness in lagers. Given the wide range of uses of this cereal in the local market, Ghanaian sorghum consumption has increased by approximately 17.3% per year. In contrast, global and regional consumption have been on the decline, with growth rates of -4.6% per year and -0.8% per year, respectively.

Competitiveness: Although Ghanaian sorghum yields are at least 50% higher than the regional average, the farm-gate price of sorghum in Ghana is \$470 per metric ton, which is 41% higher than the regional average. Burkina Faso poses a significant competitive threat in this value chain; its sorghum farm-gate prices are less than half of Ghanaian prices (\$218 per metric ton). Similarly, Ghanaian sorghum is priced 40% higher than global averages.

Investor outlook: There was moderate interest from investors in sorghum input supply, production, and processing.

Social impact: Sorghum is mainly cultivated by smallholder farmers, with significant income improvement potential. For example, farmers involved in the Guinness out-grower system have been able to increase their incomes by roughly 40%.

Northern linkage: Approximately 98% of Ghanaian sorghum is produced in the north. Sorghum is resistant to drought and high temperatures, which makes it highly viable in this region.

Illustrative Investment Opportunities

- There is potential to expand sorghum production in order to meet demand from local breweries and animal feed manufacturers.

Soybean

Market potential: The local soybean market has experienced rapid growth in recent years. From 2005 to 2009, Ghanaian soybean consumption grew by 26% per year. Regional and global growth rates were considerably lower, at 2.3% per year and 0.7% per year, respectively. In Ghana, growth is being driven by the table egg industry's use of soybean meal in "layer" poultry feed. Soybean oil, a second byproduct of soybean processing, is also in high demand from the paint industry, as it is used in the production of resin. Globally, soybean demand is being driven by the prioritization of biodiesel production in the U.S. and Europe as well as rising incomes in Asia, which have led to expanded meat consumption, increasing the need for soybean meal-based animal feed.

Competitiveness: At 1.9 metric tons per hectare, Ghana's production yields are 46% higher than the regional average of 1.3 metric tons per hectare. However, production volumes in Cote d'Ivoire (688,000 metric tons) and Nigeria (3.4 million metric tons) are much higher than Ghana's 90,000 metric tons. On a producer price basis, Ghanaian soybean is generally uncompetitive against both raw soybean and processed soybean meal imports; between 48 and 70% of the local market for soybean meal is met by imports.

Investor outlook: Investors expressed strong interest in the soybean value chain as an area for investment, due to its wide-ranging uses and had a particular interest in processing soybean to supply the growing animal feed market. However, there are concerns over potential price distortion effects of the Government's purchase of soybean through the National Food Buffer Stock Company (NAFCO).

NAFCO instituted a minimum guaranteed price for maize, rice, and soybean in 2011, which has influenced prevailing market prices and farmers' willingness to sell to processors. Correspondingly, imports of raw soybean and already processed soybean meal from Brazil have increased.

Social impact: More than 110,000 smallholder farmers are involved in the production of soybean. Investment in the soybean industry can have direct impact on these farmers; it can also have indirect impact through job creation in the industries that use soybean or processed soybean products as an input, including the poultry and biodiesel industries.

Northern linkage: About 94% of soybean production takes place in the northern regions.

Illustrative Investment Opportunities

- Investment opportunities exist in soybean production and the processing of soybean substitute imports of raw and processed soybean products.

4.4 Long-Term Investment Opportunities

Continuing to identify and promote viable private investment opportunities in the agricultural sector is a critical component of the Government of Ghana's commercial agriculture agenda. In addition to promoting opportunities in specific value chains in the short and medium term, the Government and donors are actively identifying specific locations where conditions are ripe for commercial agriculture production. Through the Ghana Commercial Agriculture Project (GCAP), the Government will also identify potential inclusive business models that can serve as viable investment opportunities—and direct support to those opportunities in the form of matching grants and technical assistance to help with upfront capital expenses and startup costs.

Through analysis conducted to identify such business models, five greenfield opportunities aimed at increasing local production of cereals emerged:

Rice commercial nucleus farm, Bamboi (\$46 million). This 4,000 hectare commercial nucleus farm will engage 600 out-growers for irrigated rice production and processing. The farm is expected to yield 44,000 metric tons of paddy and 33,000 metric tons of milled rice per year, generating average local farmer incomes of \$2,000 per year.

Maize, soybean, and rice nucleus farm, Tono (\$22 million). This opportunity involves the establishment of a 2,600 hectare nucleus farm hub to provide extension services, inputs, and processing to farmers in an existing Government irrigation scheme. The project is expected to generate \$2,500 per farmer for about 585 smallholder farmers through annual production of 20,000 metric tons of maize, soybean, and rice, as well as 720 metric tons of seed crops.

Rice block irrigated farms, Lower Volta (\$19 million). Under this project, 500 smallholder farmers will receive flood irrigation facilities and a rice mill on a 1,400 hectare site in order to grow rice in collaboration with commercial rice farmers in the area. The project is expected to generate \$1,600 per hectare for the farmers involved through the production of 14,000 metric tons of paddy and 9,000 metric tons of milled rice per year.

Rice and banana plantations, Accra Plains (\$96 million). The Accra Plains Gravity-Fed Irrigation Project (APGIP) will provide irrigation to 7,200 hectares of land to increase the production of rice by 44,000 metric tons per year; 600 hectares of this land will be used for bananas. Initial projections suggest that smallholder farmers will earn \$1,700 per hectare in income.

Maize and soybean farm, Branam (\$22 million). A total of 3,500 hectares of land will be used for the mechanized cultivation of maize and soybean in rotation for Ghana’s largest oilseed processor, which will in turn supply the poultry industry. Five hundred hectares of this land will be used for seed crops under a center pivot irrigation system. The project is expected to achieve annual production of 21,000 metric tons and increase the incomes of 300 farmers by roughly 200% to \$1,000 per hectare.

In addition to the projects detailed above, interventions through the Ghana Commercial Agriculture Project (GCAP) will be leveraged to support investments in the Accra Plains and SADA zone. These include public-private partnerships, complementary public investments, and technical assistance. Furthermore, matching grants will be made available to startup agribusinesses and enterprises that demonstrate strong commercial viability and are founded on inclusive business models that involve smallholder farmers.

Part 5: Investment Challenges and Government Responses

Prospective investors face a number of challenges that must be addressed in order to enable more effective agribusiness investment in Ghana. Either independently or in collaboration with various development partners, the Government of Ghana has taken steps to identify the most critical investment risks and develop strategies and programs to address them. Such programs are currently in place to address investors' concerns regarding (1) the lack of energy, transport, and agricultural infrastructure; (2) poor agronomic practices among smallholder farmers; (3) land availability; (4) local access to financing; and (5) the complexity of the operating environment. The challenges faced by investors and the corresponding Government responses are summarized below.

5.1 Infrastructure

Investment Challenges

The lack of agriculture-enabling infrastructure in Ghana is a critical constraint to investment.

Energy: The cost of electricity in Ghana, which can be as high as \$0.25 per kilowatt hour, is much higher than the tariffs charged in more developed markets such as South Africa (\$0.07), the U.S (\$0.12), and the Euro region (\$0.19).⁵⁵ In addition to this, sporadic power outages can lead to significant productivity losses for energy-intensive commercial production and industrial processing. In 2006 alone, the economic cost of Ghana power outages amounted to 2% of GDP.

Transport: Limited road networks increase the cost of transporting goods; the lack of feeder roads linking potential production opportunities with markets is particularly problematic for producers in the north, who are located far away from the more active markets in southern Ghana.

Ports: Congestion and inefficiencies at ports can create considerable delays in clearing goods, which is of serious consequence to agribusinesses actively involved in importing and exporting.

Agricultural infrastructure: Underdeveloped irrigation facilities throughout the country create a dependency on inefficient rain-fed production. Furthermore, a lack of community storage facilities results in increased post-harvest losses.

Government of Ghana Responses⁵⁶

Energy: As part of a \$3 billion master facility agreement between the Government of Ghana and the China Development Bank Corporation to finance infrastructure, \$850 million has been allocated to the Western Corridor Gas Infrastructure Development Project. Sinopec International of China has been engaged as an implementing partner to establish the 150 million cubic-feet-per-day gas processing plant and provide a reliable supply of gas to operate thermal power plants in the Jubilee Field, located in Brong-Ahafo between the Deepwater Tano and West Cape Three Points blocks.⁵⁷

Road infrastructure: Through a partnership with MiDA, 14.1 kilometers of road have been upgraded on the Tetteh-Quarshie highway in Accra—at a total cost of \$173.2 million—to enable a thoroughfare for

⁵⁵ Eurostat; Energy Information Administration.

⁵⁶ Projects cited are illustrative of the Government of Ghana's efforts and are not intended to provide a comprehensive view of all projects that are currently underway.

⁵⁷ "Signing of CDB Master Facility," *Ghana Herald*, 10 February 2012.

agricultural goods to the Tema seaport and the Kotoka International Airport. An additional \$70.6 million has been used to develop feeder roads in the Eastern, Central, and Volta regions; a further \$30.11 million investment has been made to improve transportation linkages in the Afram Plains. Meanwhile, 330 kilometers of feeder roads have been fully designed and are awaiting funds from the second MiDA funding compact (not yet signed) between the Government of Ghana and the U.S. government.⁵⁸

Rail infrastructure: The rehabilitation and extension of the Accra-Tema suburban railway line from Tema Harbour is in progress and was 60% complete as of November 2011.⁵⁹ The CDB facility is also being leveraged to reconstruct the Western Railway Line.

Ports: The Takoradi Port Expansion Project and the Multi-Modal Transport Project that links the Tema Port by rail to the Volta Lake will be undertaken under the CDB facility.

Irrigation: The Ghana Irrigation Development Authority has 22 irrigation schemes covering a total of 7,185 hectares of land under its management.⁶⁰ Through various partnerships, plans are in place to increase the acreage of land under irrigation: the World Bank has committed \$45.4 million to expand irrigation facilities to 7,000 hectares of land in the Accra Plains under a GCAP public-private partnership arrangement inclusive of anchor commercial farmers and out-growers;⁶¹ two contracts have been awarded for the development of two dams at Dawa and Ave-Afiadenyegba; and AFD and the Government of Ghana have allocated \$36.1 million to the development of irrigation facilities in the Afram Plains.⁶² In addition to these ongoing initiatives, the National PPP Policy Framework has been drafted to continue to facilitate public-private partnerships in the development of irrigation schemes for private management.⁶³

Warehousing facilities: GCAP will support the rehabilitation and construction of agricultural storage infrastructure and processing facilities in the SADA zone through public-private partnerships.⁶⁴

Figure 30: Summary of Illustrative Government of Ghana Responses to Infrastructure Challenges

Focus Area	Description of Initiatives
Energy	\$850 million has been allocated to the Western Corridor Gas Infrastructure Project through a \$3 billion facility from China Development Bank (CDB)
Transport	\$274 million has been allocated to developing highways, feeder roads and trunks roads through a GoG-MiDA partnership; the Accra-Tema sub-urban railway and the Western railway line are being rehabilitated; a Takoradi Port Expansion project is being undertaken through the CDB facility
Agricultural	(i) Under GCAP, \$90.8 million has been committed to expanding irrigation to 7,000 ha in the Accra Plains while a portion of the \$64.3 million investment in the SADA zone will be used for storage infrastructure; (ii) contracts have been awarded to develop two dams at Ave-Afiadenyegba and Dawa; (iii) AFD and the GoG have allocated \$36.1 million to develop irrigation in the Afram Plains

⁵⁸ "MiDA Funding for Transport Infrastructure," *Ghana News Agency*, 24 February 2012.

⁵⁹ 2012 Budget Statement and Economic Policy for the Government of Ghana.

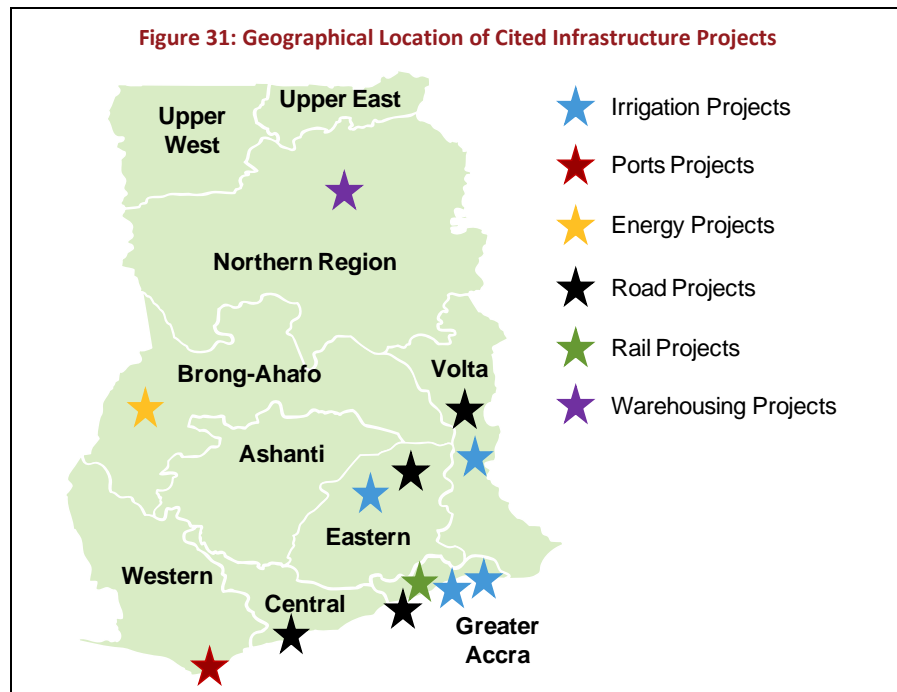
⁶⁰ Ministry of Food and Agriculture.

⁶¹ GCAP Project Appraisal Document, World Bank, February 2012.

⁶² Strategic issues for Irrigation Development in Ghana, Svendsen, 2011.

⁶³ MoFEP National PPP Policy Framework.

⁶⁴ GCAP Project Appraisal Document, World Bank, February 2012.



5.2 Poor Agronomic Practices

Investment Challenges

Ghana's agricultural sector relies primarily on smallholder farmers operating on fewer than two hectares—which limits the scale available, increases the cost of securing inputs, and reduces the reliability of produce quality. These smallholders are responsible for approximately 90% of total agricultural production. The unsophisticated farming practices employed by many of these farmers, compounded by the lack of scale economies, can result in low yields and high production costs. Additionally, the sector is plagued by limited adoption of improved inputs and mechanization. As a result, smallholder farmers are not always able to guarantee their supply of produce in the required quality and quantity.

Illustrative Government of Ghana Responses

Seeds: Seed laws passed in 2012 enable private investors to import and produce breeder and foundation seeds within set regulatory bounds for certification.⁶⁵ Following this liberalization, Pioneer Hi Bred Seeds set up an irrigated maize production program in northern Ghana. MoFA is also working with the IFDC to strengthen Ghana's agro-input dealer network and has publicized intentions to begin subsidizing certified seeds in 2012 in order to improve farm-level productivity.⁶⁶

Fertilizer: From 2008 to 2010, the Government of Ghana spent more than \$150 million on fertilizer subsidies, representing more than 360,000 metric tons of fertilizer; it continues to provide this

⁶⁵ "Liberalization of Seed Sector," Ghana News Agency, 18 February 2012.

⁶⁶ Ministry of Food and Agriculture.

assistance to smallholder farmers. Farmers who have participated in this program have been able to increase their yields by an average of 131% and improve the profitability of their farms from -22% to 13%.⁶⁷

Mechanization: Through the Agricultural Mechanization Service Centres (AMSEC), MoFA extends credit to assist private sector companies in purchasing machinery that can be utilized to provide mechanization services to smallholder farmers. Through this offering, the average area under mechanization has increased from 5.3 acres per farmer in 2008 to 7.8 acres per farmer in 2010. In 2011, MoFA facilitated the import of 5,000 tractors by 84 private sector AMSECs, enabling 194 farmers on 786 acres of land across Ghana to receive mechanization services.

Block Farm Program: Under this program, land is shared in blocks among farmers supervised by MoFA staff. Block farms are provided with facilities to obtain tractor services and inputs at subsidized prices. On average, each block farm aggregates 25 smallholder farmers on 50 acres of land. In 2011, the program reached a total area of 49,733 hectares, implying an impact on roughly 14,400 farmers based on these averages. Farmers were reported to have doubled their yields under this program. However, repayment rates were very low, casting doubt on the sustainability of the program. In the long run, the Government of Ghana intends to further aggregate block farms into commercial farms in order to exploit economies of scale.

Crop services programs: MoFA is also supervising various crop services programs, such as the Roots and Tubers Improvement and Marketing Program and the Export Marketing and Quality Awareness Program, both of which provide inputs, training, credit facilities, and infrastructure to farmers.

Figure 32: Summary of Illustrative Government of Ghana Responses to Poor Agronomic Practices

Focus Area	Description of Initiatives
Seeds	(i) New seed laws permit private investors to import certified seed through the appropriate regulations; (ii) MoFA is working with the IFDC to strengthen Ghana's agro-input dealer network; (iii) Future seed subsidies are being considered and formulated
Fertilizer	The GoG has spent more than \$150 million on fertilizer subsidies since 2008, increasing participating farmers' yields by an average of 131%
Mechanization	At least 84 Agricultural Mechanization Service Centers have been established with financial support from the GoG to serve 194 farmers on 786 acres
SHF Aggregation	Under the Block Farms Program, at least 14,400 farmers have been aggregated on blocks of ~50 acres with 25 farmers each

5.3 Land Availability

Investment Challenges

The process of identifying and acquiring large tracts of land suitable for commercial production is difficult due to the fragmented nature of landholdings as well as unclear ownership. Once land has been

⁶⁷ Evaluation of MoFA Initiatives: Fertilizer Subsidies, AMSEC, Block Farm Program, 2011.

acquired, clearing cannot commence until local and customary rulers have been consulted. In addition to these complexities, investors fear land disputes as well as unfavorable land policies (e.g., nationalization) that could result in investment losses.

Illustrative Government of Ghana Responses

In 2004, the Government of Ghana began implementing the Land Administration Project, a series of sequential programs set to run over 15 to 20 years in total. The World Bank contributed \$20.5 million to the first phase of the project (which has now ended); the objectives of this initial phase included undertaking land policy and institutional reforms and laying a foundation for a sustainable, decentralized land administration system. Key achievements under this project thus far include streamlining institutional arrangements for land administration, culminating in the passage of the Lands Commission Act 767; the initiation of land titling, which has provided security for land owners to develop their land and use it as collateral in securing loans; decentralizing the deeds registry to the nine regional capitals, making it easier to access agricultural land and reducing the time taken to register from 36 months to two months; and the establishment of 38 Customary Land Secretariats that have compiled an estimated 58,000 land records.⁶⁸ LAP II has subsequently emerged as the second phase of this project.

Under GCAP, the Lands Commission is establishing a land bank, which will include information from the land registry and MoFA regarding the location of available land, facilities in the vicinity, and crop potential. GCAP will also support the development of model lease agreements, thus enabling interested investors to more effectively negotiate leases with local communities and more clearly articulate the land rights associated with a lease.⁶⁹

Figure 33: Summary of Illustrative Government of Ghana Responses to Land Availability

Initiative	Description
<i>Land Administration Project</i>	LAP is a 15–20 year project that is being undertaken to establish land policy and institutional reforms that lay a foundation for a sustainable, decentralized land administration system. The first phase of the project was conducted under a partnership with the World Bank
<i>Land Bank</i>	Under GCAP, a Land Bank is being established to assist investors in identifying, acquiring, and registering land

5.4 Local Access to Financing

Investment Challenges

The high costs associated with accessing the limited financing that is available for agriculture are a significant limitation for local investors who do not always have access to foreign capital. Commercial banks extend agricultural loans at interest rates as high as 25 to 35% and over time periods of less than three years, which is unaffordable for most. On the demand side, investors cite financiers' lack of technical agricultural expertise as the reason that such high levels of risk are associated with agribusinesses. On the supply side, financiers find that many businesses seek financing without taking

⁶⁸ "Ghana Projects and Programs: Report on LAP II," World Bank, 2010.

⁶⁹ GCAP Project Appraisal Document, World Bank, February 2012.

the necessary steps to prove the viability of the investment (e.g., through the provision of robust business plans, historic financial records showing profitability, or involvement of a strong management team that is able to deliver against the business model).

Illustrative Government of Ghana Responses

Export Development and Agriculture Investment Fund: The mandate of the Export Development and Agriculture Investment Fund was recently expanded to include lending to the agricultural sector. The fund collects revenues from export excises and lends money to commercial banks at wholesale rates or approximately 2% to enable on-lending to agribusinesses at interest rates of 12 to 15%.

Out-Grower Value Chain Fund: MoFA and MoFEP signed a \$14.6 million financing agreement with the German Development Cooperation through KfW to operate an Out-Grower Value Chain Fund. The OVCF makes financing available to farmer based organizations, technical operators, and financial operators that jointly apply for funds to support out-growers and/or integrate smallholder farmers into commercial agriculture.

Venture Capital Trust Fund: In 2006, the Government of Ghana committed \$14 million to establish the Venture Capital Trust Fund, the mandate of which is to develop a venture capital industry in Ghana for the provision of equity financing to SMEs. Currently, 40% of the businesses in which VCTF is invested are in the agricultural sector. A \$10 million Agriculture Sector Fund is also being developed through partnerships with the private sector and donors.⁷⁰

Other financial incentives: In addition to extending patient capital, the Government of Ghana has also undertaken a number of initiatives to address financing constraints. MoTI is designing warehouse receipt systems; the METASIP Steering Committee is currently researching innovative models for catalytic financing in agriculture; finally, investment incentives such as tax holidays that range from five to 10 years, customs duty exemptions on capital goods, and accelerated depreciation for plants and machinery have been made available to agribusinesses.⁷¹

Figure 34: Summary of Illustrative Government of Ghana Responses to Financing Challenges

Initiative	Description
Provision of Concessionary Finance	<p>The GoG has established financial institutions with a mandate to provide concessionary finance:</p> <ul style="list-style-type: none"> • Export Development & Agriculture Investment Fund collects revenues from export excises and lends money to commercial banks at ~2% to enable on-lending to agribusinesses at 12%–15% • Venture Capital Trust Fund was tasked with providing equity financing to SMEs • Out-Grower Value Chain Fund is operated through a partnership with KfW and makes financing available to FBOs, technical operators, and financial operators
Investment Incentives	Additional incentives include tax holidays, duty exemptions on capital goods and accelerated depreciation for plants and machinery

⁷⁰ Interviews with VCTF management.

⁷¹ Ghana Investment Promotion Centre.

5.5 Complex Operating Environment

Investors often face difficulty in locating reliable information to evaluate the attractiveness of opportunities in Ghana's agricultural sector (e.g., demand and pricing data). In cases where attractive opportunities have been identified, high levels of bureaucracy make it difficult to determine the rules related to pursuing investments, such as policies around company, tax, and duty registrations. Furthermore, the slow execution of these processes by the relevant agencies makes opportunities less attractive to investors.

Illustrative Government of Ghana Responses

Under GCAP, \$11.8 million, funded through equal contributions from the World Bank and USAID, is being allocated to the promotion of a secure investment climate that clarifies and strengthens the rights and obligations of investors, the Government, and affected communities. This initiative will include the establishment of a Project Implementation Unit to catalyze future investments and build the capacity of the GIPC to improve investment promotion and investor aftercare.⁷²

Figure 35: Summary of Illustrative Government of Ghana Responses to the Complexity of the Operating Environment

Initiative	Description
GCAP	Component 1 of GCAP will commit funds to improve the enabling environment for agriculture investment, including strengthening the capacity of the Ghana Investment Promotion Centre as well as establishing a Project Implementation Unit to provide support to investors interested in the Ghanaian agricultural sector

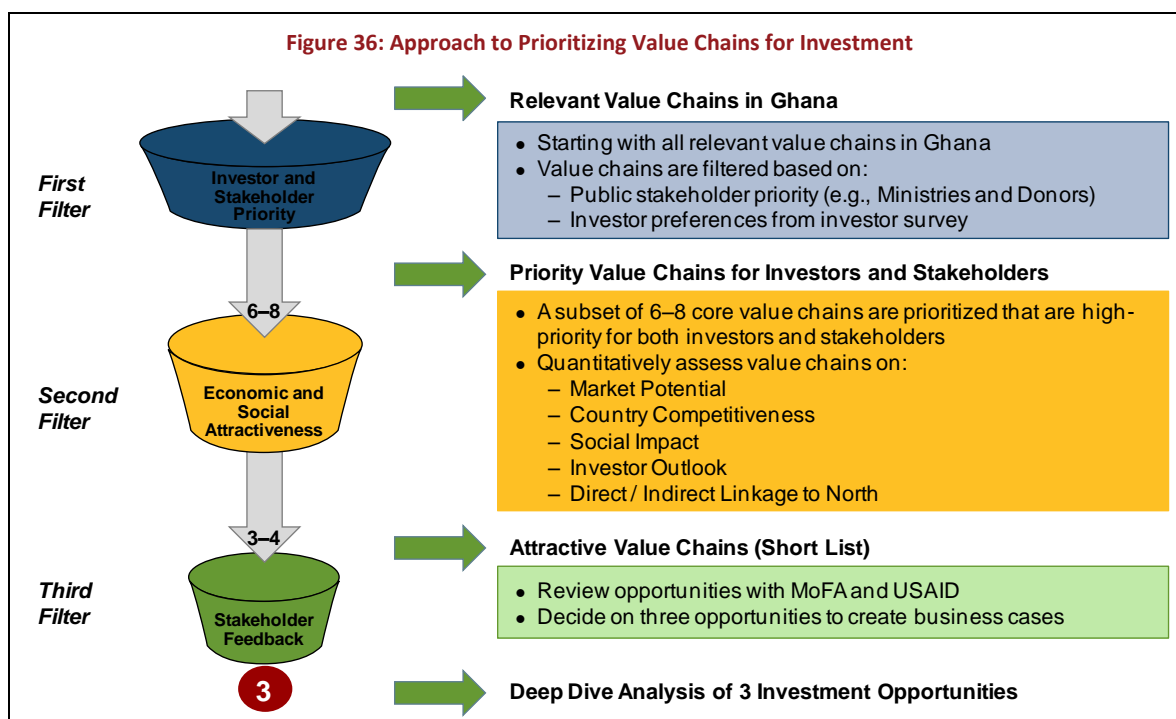
⁷² GCAP Project Appraisal Document, World Bank, February 2012.

Conclusion

The Ghanaian economy has shown robust growth over the past decade and is forecast to continue experiencing GDP growth of approximately 7% per year in the near future. This growth, combined with the country's stable democratic tradition, rule of law, and investor protections that are unmatched in the sub-region, has created a strong and secure operating environment for investors. Given that the agricultural sector is a key driver of the Ghanaian economy, accounting for 30% of national GDP and 51% of national employment, there is strong support from the Government of Ghana and its development partners to ease challenges in the sector and facilitate additional investment. As such, private investors can expect to receive long-term support in pursuing opportunities for investment in this sector, particularly in the country's northern regions, where agricultural development is a top national priority.

Appendix: Prioritization Methodology for Identified Investment Opportunities

The short- and medium-term investment opportunities detailed in Part 4 of this document were identified by filtering value chains through three sets of criteria. The details of the methodology employed and the results that were obtained are described below.



Filter One Prioritization

Description of Filter One Methodology

The first filter of analysis incorporated perspectives from the public and private sectors in order to determine value chains that are attractive to both groups of stakeholders. A total of 66 investors were surveyed and an additional 12 donors and Government agencies were interviewed to obtain an understanding of where their priorities lie. Value chains that passed this filter of analysis received medium-high interest from private sector investors as well as donors and Government agencies.

Figure 37: Filter One Methodology

Investor Preference	High	▲ Yes	▲ Yes	▲ Yes
	Medium	▼ No	▲ Yes	▲ Yes
	Low	▼ No	▼ No	▼ No
		Low	Medium	High
		Stakeholder Priority		

Results of Filter One Prioritization

Based on investors' expressed preferences and stakeholder priorities, seven value chains out of the initial set of 22 were selected for further analysis: maize, rice, soybean, sorghum, cassava, cashew, and poultry. These results are presented in **Figure 38**. Value chains that were not selected either received

low interest from investors or a combination of medium interest from stakeholders and low interest from investors.

Figure 38: Filter One Results

Figure 38: Filter One Results

Value Chains		Investor Priority	Stakeholder Priority	Selected for Next Stage
Food Crops	Maize	HIGH	HIGH	▲ Yes
	Rice	HIGH	HIGH	▲ Yes
	Soybean	HIGH	HIGH	▲ Yes
	Sorghum	MID	MID	▲ Yes
	Cassava	MID	HIGH	▲ Yes
	Plantain	LOW	MID	▼ No
	Yam	LOW	LOW	▼ No
Fruit and Vegetable	Cashew	MID	MID	▲ Yes
	Pineapple	LOW	MID	▼ No
	Citrus	LOW	MID	▼ No
	Banana	LOW	LOW	▼ No
	Mango	LOW	HIGH	▼ No
	Tomato	LOW	MID	▼ No

Value Chains		Investor Priority	Stakeholder Priority	Selected for Next Stage
Industrial Crops	Poultry	MID	MID	▲ Yes
	Oil palm	HIGH	MID	▼ No
	Sugar	LOW	LOW	▼ No
	Cotton	LOW	LOW	▼ No
	Jatropha	LOW	LOW	▼ No
	Sheanut	MID	LOW	▼ No
	Livestock	LOW	LOW	▼ No
	Fisheries	LOW	LOW	▼ No
Agro-Inputs	LOW	MID	▼ No	

Filter Two Prioritization

Description of Filter Two Methodology

Under Filter Two, each of the seven value chains was examined in terms of its market potential, country competitiveness, investor perspectives, potential social impact, and linkage to northern Ghana, as shown in **Figure 39**.

Market Potential: A weighted consumption growth figure was calculated based on local, regional, and global consumption growth weighted by the distribution of production quantity to each of these end markets.

Country Competitiveness: This criterion measured the percentage difference between Ghana and the regional average for production or export value per hectare (for crops) or per animal (for poultry). The indicator multiplies farm-gate prices for domestic market commodities, or export prices for export market commodities, by the yield or productivity of the commodity to determine a value per hectare or animal. Regional comparisons were based on the group of ECOWAS countries.

Investor Outlook: Interviews with 66 private sector agribusinesses and investors were analyzed to understand commodity preferences. Private sector stakeholders, including agricultural businesses as well as financial investors such as investment funds and commercial banks, cited their interest in potentially investing in a commodity. This was supplemented with information from a Government of Ghana database of 50+ additional projects that are being run by either existing agribusinesses or prospective investors with an interest in the Ghanaian agricultural sector.

Social Impact: Impact on smallholder farmers was analyzed by evaluating the current smallholder farmer contribution to production of the commodity in Ghana. The impact on gender equity and job creation was also considered under this criterion.

Linkage to the North: Value chains were assessed according to the number of smallholder farmers in the SADA zone that are growing the commodity as well as the proportion of national production that their produce represents.

Figure 39: Filter Two Methodology

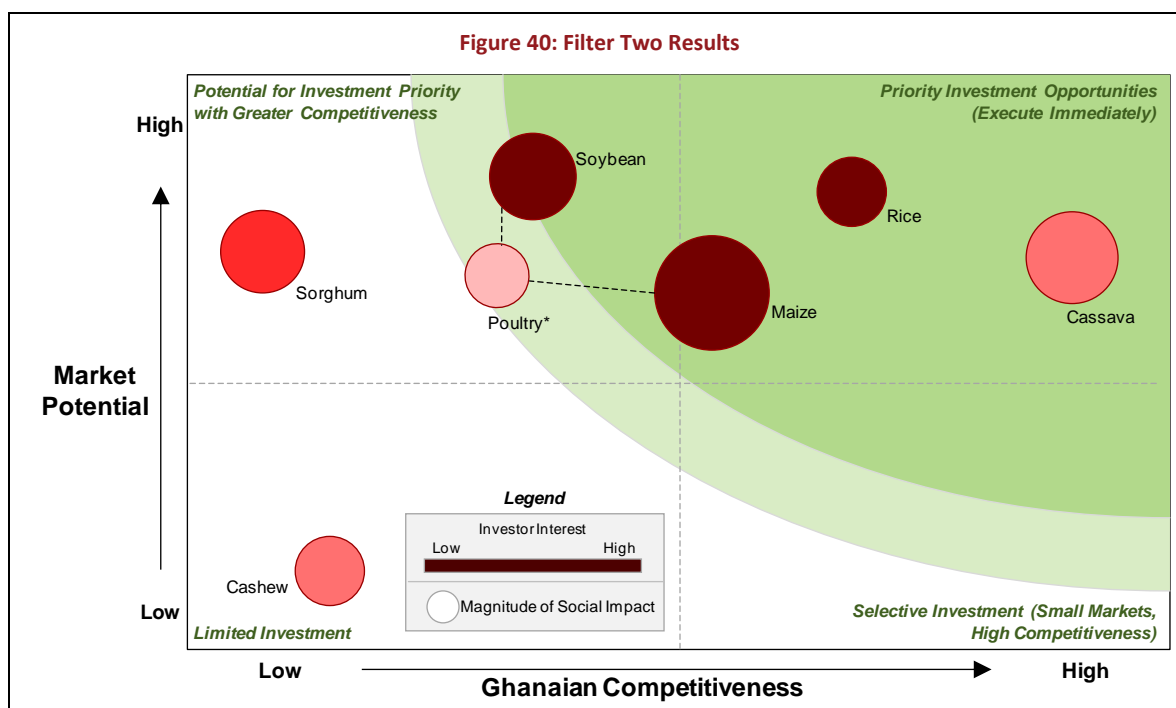
Criteria	Indicators	Methodology
1 Market Potential	1. Local Market Potential 2. Regional Market Potential 3. Global Market Potential	<ul style="list-style-type: none"> Calculate consumption indicator: $Consumption = Productions + Imports - Exports$ Project additional production volume required by 2015 (above 2011 estimate) by determining average growth between 2005–2009 and using 2009 production as baseline Use production and export data to calculate and assign weights to domestic, regional, and global figures
2 Ghana's Competitiveness	1. Ghana's relative productivity (yield, MT/ha) 2. Ghana's indicative cost efficiency (producer prices, \$/MT)	<ul style="list-style-type: none"> For all value chains: Evaluate yields and rank relative competitiveness within the regional and global markets For domestic-market oriented value chains: acquire farm gate prices per unit (e.g., MT) and calculate percentage difference (Ghana and region) For export-market oriented commodities: acquire export prices per unit and calculate percentage difference (Ghana, region and global)
3 Social Impact	1. Estimated impact on smallholder farmers and gender equity	<ul style="list-style-type: none"> From value chain analyses and interviews with private sector actors and GoG / donor stakeholders, evaluate number of farmers impacted in value chain, importance of commodity to local diet, and impact on gender equity Assess social impact on 1–4 rating: 1) None / marginal; 2) Low; 3) Moderate; 4) High
4 Investor Outlook	1. Preferences shared with current or potential private sector players	<ul style="list-style-type: none"> Sum up commodity preferences from private sector interviews and separate into three groups by low, moderate, and high investor interest
5 Linkage to North	1. Direct or indirect linkage to Northern Savannah Region	<ul style="list-style-type: none"> Identify number of farmers in Northern Savannah growing commodity and proportion of national production

Results of Filter Two Prioritization

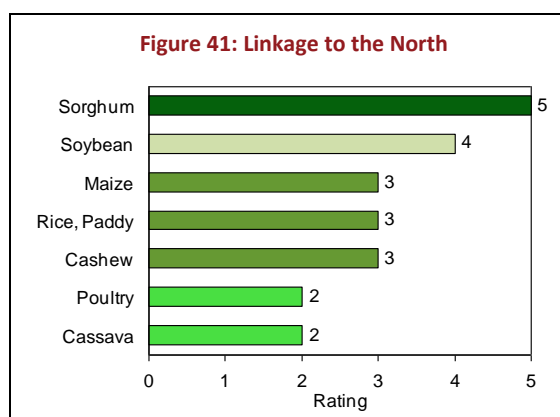
Criteria 1-4:

Results for the first four criteria are shown in **Figure 40**. The y-axis represents the market potential of each value chain. The x-axis represents the competitiveness of the commodity, as indicated by the percentage difference between Ghana's cost per hectare/animal and the regional average. The size of the bubble represents the potential social impact of the value chain, or its predicted contribution to the livelihoods of smallholder farmers and other Ghanaians. Finally, the color intensity of the bubbles indicates the level of interest from private sector investors.

Soybean and rice showed the greatest promise in terms of market potential, while cassava would allow Ghana to exploit its competitiveness against other countries in the region. Maize and cassava engage the largest number of smallholder farmers; meanwhile, investors expressed the most interest in the soybean, rice, and maize value chains.



Criteria 5: For the last criterion of Filter Two analysis, commodities were rated high, medium, or low for their compatibility with or positive impact on Ghana's northern regions. Data was acquired on production area or volumes per region for each value chain and the proportion attributable to the northern regions was determined. From this, the number of farmers in the northern region was estimated for each value chain and a rating was determined by comparing the estimated number of northern farmers in each value chain to the value chain with the highest number. As shown in **Figure 41**, sorghum, soybean, maize and rice were rated highest in terms of their contribution to economic development in the north. The results of the analysis regarding linkage to the north are provided below.



- **Sorghum: High**

- Approximately 157,000 farmers are currently involved in the cultivation of sorghum in Ghana, with 98% of this cultivation taking place in the northern regions. As such, approximately 154,000 sorghum farmers are currently based in the north.

- **Soybean: Moderate-High**

- Northern Ghana accounts for 94% of the country's total area under soybean cultivation. Given that 110,000 farmers in the country are involved in this production, 104,000 farmers are estimated to be in the north.

- **Maize: Moderate**
 - Roughly 320,000 farmers are involved in the maize value chain, and 21% of the total area under maize cultivation is in the north. Consequently, with 66,000 maize farmers estimated to be in the north, maize has a moderate linkage to the region.
- **Rice, Paddy: Moderate**
 - While 63% of the area under rice cultivation is in the north, there are 84,000 farmers involved in rice production—far fewer farmers than those involved in sorghum, soybean, or maize cultivation. As such, rice was rated to have a moderate linkage to the North, with 53,000 farmers estimated to be in the region.
- **Cashew: Moderate**
 - Approximately 43,000 cashew farmers are operating in northern Ghana, as 62% of the country's 70,000 cashew farmers are located in the north.
- **Poultry: Low-Moderate**
 - The number of farmers involved in poultry farming was not available, although it is known that 11% of Ghana's "layer" poultry are in the north. Considering the fact that it is difficult for poultry to survive in the north and that poultry importation in Ghana has been increasing, poultry was rated to have a low-moderate linkage to the north.
- **Cassava: Low-Moderate**
 - Although 171,000 farmers in the country are involved in cassava production, only 10% of these (17,000) are estimated to be in northern Ghana.

Summary of Filter Two Prioritization Results

As a result of Filter Two analysis, maize, rice, and cassava were prioritized as value chains that present attractive opportunities for short-term investment while leveraging the development of the north. These three value chains then underwent further consideration to identify specific short-term investment opportunities within them (see Filter Three). Opportunities in soybean, sorghum, cashew, and poultry, while attractive, will require various developments in order to improve their competitiveness and become viable. As such, these value chains present opportunities in the medium term.

Filter Three Prioritization

Within the maize, rice, and cassava value chains, a long list of brownfield (current operating businesses) and greenfield investment opportunities were identified through discussions with 50+ stakeholders in Ghana's private and public sectors.

That list of potential investments was then reduced to 10, each representing (a) a business currently existing in Ghana and seeking investment to expand operations; (b) a qualified startup agribusiness opportunity; or (c) an agribusiness operating elsewhere in sub-Saharan Africa that wanted to begin operations in Ghana.

These 10 investment opportunities were then screened along the following criteria:

Access to markets: A qualitative assessment of the security of the market for the opportunity's product; opportunities where markets were secured (e.g., through contractual agreements) were given higher priority.

Management capability: A qualitative assessment of the capability of management associated with the opportunity, as judged by experience within the value chain, experience operating at scale, and level of alignment with previously successful business models.

Investment readiness: A qualitative assessment of the near-term readiness for investment of the opportunity, including assessment of steps taken to date to prepare the opportunity for investment (e.g., preparation of financial statements, business plan, and shareholders' agreement).

Inclusion of smallholder farmers: A qualitative and quantitative assessment of the number of smallholder farmers potentially impacted by the investment opportunity as out-growers, suppliers, or customers of the business; this criterion included consideration of potential improvements to farmers' growing practices as a result of investment.

Meetings were conducted with the Ministry of Food and Agriculture and USAID to review the 10 identified near-term opportunities for further investment analysis. Based on this filtering exercise, three opportunities were identified as having the highest potential. These opportunities are merely illustrative of the types of opportunities that can be found in the Ghanaian agricultural sector, and include:

- Investment in intermediary cassava processing to produce cassava cake and flour, for use as a brewery input and as a replacement for wheat flour
- Investment in an smallholder farmer aggregator in northern Ghana to provide for a long-term commercial capital base and replace the NGO funding that established the business
- Investment in a certified seed manufacturer in northern Ghana to expand seed processing activities in maize, rice, soybean, sorghum, cowpea, and groundnut

These and other illustrative opportunities can be found in Part 4 of this report, "Investment Opportunities in Ghanaian Agriculture."